

เอกสารแนบ 3.3.1

ร่างสัญญาซื้อขายไฟฟ้า  
โครงการไฮยะบุรี



**XAYABURI POWER**

YOUR SENSE OF ENERGY

# **POWER PURCHASE AGREEMENT**

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## **XAYABURI HYDROELECTRIC POWER PROJECT**

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BETWEEN

**ELECTRICITY GENERATING AUTHORITY OF THAILAND**

AND

**XAYABURI POWER COMPANY LIMITED**

**Dated [.....]**

**Volume One: Main Text**

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**THIS AGREEMENT** is made on the    day of [    ]

**BETWEEN:**

- (1) **ELECTRICITY GENERATING AUTHORITY OF THAILAND**, a state enterprise organized under the laws of Thailand, whose registered office is situated at 53 Charansanitwong Road, Bang Kruai, Nonthaburi 11130, Thailand (“EGAT”); and
- (2) **XAYABURI POWER COMPANY LIMITED**, a company incorporated under the laws of the Lao PDR, whose registered office is situated at 215, Lane Xang Avenue, Ban Xieng Yuen, Vientiane, Lao PDR (“the Generator”).

EGAT and the Generator are individually a “Party” and collectively the “Parties”.

**WHEREAS:**

- (A) The Government of Thailand (the “GOT”) and the Government of Lao People’s Democratic Republic (the “GOL”) have entered into a Memorandum of Understanding dated 19<sup>th</sup> June, 1996 (the “1996 MOU”) wherein the parties thereto agreed to support the development of power projects in the Lao PDR for supply of generating capacity and electrical energy to Thailand of up to a capacity of 3,000 Megawatts by the year 2006.
- (B) The GOT and the GOL have subsequently agreed to vary the 1996 MOU and support the development of power projects in the Lao PDR for supply of generating capacity and electrical energy to Thailand, namely: (i) on 18<sup>th</sup> December 2006 both parties agreed to increase such target of supply from 3,000 Megawatts to 5,000 Megawatts by the end of the year 2015, such amount of 5,000 Megawatts having included the 3,000 Megawatts referred to in Recital (A); and (ii) on 22<sup>nd</sup> December 2007 both parties agreed further that they may either within or after the year 2015 expand their cooperation and increase the target of supply from that amount of 5,000 Megawatts to approximately 7,000 Megawatts, such amount of 7,000 Megawatts having included the 3,000 Megawatts referred to in Recital (A).
- (C) The Generator and the GOL have entered into the Concession Agreement relating to the Xayaburi Hydroelectric Power Project in the Lao PDR, dated 29<sup>th</sup> October 2010, under which the Generator is authorized to develop, own and operate the Xayaburi hydroelectric power facility and to sell electrical energy generated thereby to EGAT.
- (D) EGAT and CH. KARNCHANG PUBLIC COMPANY LIMITED have entered into a memorandum of understanding dated 5<sup>th</sup> July 2010, which set forth the principal terms and conditions relating to selling generating capacity and electrical energy produced from the Generator System to EGAT.
- (E) The Generator has agreed to develop, own and operate the Generator System,

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Recitals

to make available generating capacity and to supply electrical energy to EGAT at the Delivery Point and EGAT has agreed to purchase generating capacity and electrical energy from the Generator and to make payments required of it in accordance with the terms and conditions of this Agreement.

- (F) The Parties agree that the Facility shall be operated under the full dispatch of EGAT in accordance with the terms and conditions of this Agreement.

**NOW IT IS HEREBY AGREED AS FOLLOWS:**

DK.

BY

Confidential

**1. DEFINITIONS, INTERPRETATION AND CONDITIONS PRECEDENT****1.1 Definitions**

Unless otherwise defined herein, capitalized terms used herein (including in the Recitals) shall have the following meanings, whether used in the singular or in the plural:

<b>“Acceptance Date”</b>	The date on which a Certificate is accepted or deemed to be accepted pursuant to Section 2.10.4(a);
<b>“Acceptance Tests”</b>	The term shall have the meaning assigned thereto in Section 2.10.2(a)(i);
<b>“Account”</b>	Each of the accounts more particularly set out in Paragraph 9 of Schedule 4;
<b>“Accumulated Dispatch Shortfall Energy”</b>	The term shall have the meaning assigned thereto in Section 4.3(b);
<b>“Accumulated Dispatch Shortfall Payment”</b>	The term shall have the meaning assigned thereto in Paragraph 3(c) of Schedule 4;
<b>“Accumulated Supply Excess Energy”</b>	Either or both of the Accumulated Supply Excess Primary Energy and the Accumulated Supply Excess Secondary Energy, as the context may require;
<b>“Accumulated Supply Excess PE Payment”</b>	The term shall have the meaning assigned thereto in Paragraph 6(b) of Schedule 4;
<b>“Accumulated Supply Excess Primary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 6(a) of Schedule 4;
<b>“Accumulated Supply Excess Secondary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 6(a) of Schedule 4;
<b>“Accumulated Supply Excess SE Payment”</b>	The term shall have the meaning assigned thereto in Paragraph 6(b) of Schedule 4;
<b>“Accumulated Supply Shortfall Energy”</b>	Either or both of the Accumulated Supply Shortfall Primary Energy and the Accumulated Supply Shortfall Secondary Energy, as the context may require;

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<b>“Accumulated Supply Shortfall Primary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2(b) of Schedule 5;
<b>“Accumulated Supply Shortfall Secondary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2(b) of Schedule 5;
<b>“Accuracy Test”</b>	The field accuracy tests for the energy meters comprised in the Metering System performed using a reference energy meter;
<b>“Actual Outage Finish Time”</b>	The term shall have the meaning assigned thereto in Section 3.6.9;
<b>“Actual Outage Start Time”</b>	The term shall have the meaning assigned thereto in Section 3.6.9;
<b>“Additional Energy Account”</b>	The term shall have the meaning assigned thereto in Section 4.9(i) and Paragraph 5(d) of ‘Schedule 4;
<b>“Additional Security”</b>	The term shall have the meaning assigned thereto in Section 9.4.1;
<b>“Additional Testing”</b>	The term shall have the meaning assigned thereto in Section 2.11.2(a);
<b>“Adjusted Weekly EE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 1.5.3 of Part II of Schedule 3;
<b>“Adjusted Weekly PE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 1.5.1 of Part II of Schedule 3;
<b>“Adjusted Weekly SE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 1.5.2 of Part II of Schedule 3;
<b>“Affected Party”</b>	The term shall have the meaning assigned thereto in Section 11.1(a);

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<b>“Affiliate”</b>	When applied to a Person, any other Person controlling, controlled by or under common control with such first-named Person; provided that: (i) in the event that any Person that owns directly or indirectly securities having 10% or more of the voting power for the election of directors or other governing body of a corporation or 10% or more of the partnership or other ownership interests of any other Person (other than as a limited partner of such Person) then that Person will be deemed to control such corporation or other Person; and (ii) while it remains as a Shareholder, Electricity Generating Public Company Limited shall not be regarded for the purpose of this Agreement as an Affiliate of EGAT;
<b>“AGC Failure Excess Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 4 of Part II of Schedule 7;
<b>“Agreement”</b>	This Power Purchase Agreement including the Schedules attached hereto;
<b>“Annual Declaration”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1 of Part I of Schedule 3;
<b>“Annual Energy Availability Declaration”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.2(c) of Part I of Schedule 3;
<b>“Annual LD”</b>	The term shall have the meaning assigned thereto in Section 9.6.5;
<b>“Annual Maintenance Outage Allowance”</b>	The term shall have the meaning assigned thereto in Paragraph 5.2.2(c) of Part I of Schedule 1;
<b>“Annual Maintenance Period”</b>	The term shall have the meaning assigned thereto in Part I of Schedule 20;
<b>“Annual Minimum PE Guarantee”</b>	The term shall have the meaning assigned thereto in Paragraph 5.1.1(ii) of Part I of Schedule 1;

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<b>“Annual PE Supply”</b>	In respect of a given Contract Year, the sum of all Monthly Supply in respect of Primary Energy for each relevant month comprised in such given Contract Year;
<b>“Annual PE Supply Account”</b>	The term shall have the meaning assigned thereto in Paragraph 9.2(a) of Schedule 4;
<b>“Annual PE Supply Target”</b>	The term shall have the meaning assigned thereto in Section 4.4.1(b);
<b>“Annual Planned Outage Program”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.2(b) of Part I of Schedule 3;
<b>“Annual SE Supply Target”</b>	The term shall have the meaning assigned thereto in Section 4.4.1(b);
<b>“Annual Settled Energy Target”</b>	The term shall have the meaning assigned thereto in Section 4.4.2(a);
<b>“Annual Supply Shortfall Energy”</b>	Either or both of the Annual Supply Shortfall Primary Energy and the Annual Supply Shortfall Secondary Energy, as the context may require;
<b>“Annual Supply Shortfall Primary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 6(c) of Schedule 4;
<b>“Annual Supply Shortfall Secondary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 6(c) of Schedule 4;
<b>“Annual Supply Target”</b>	The term shall have the meaning assigned thereto in Section 4.4.1(b);
<b>“Annual Testing”</b>	The term shall have the meaning assigned thereto in Section 2.11.1(a);
<b>“Annual Testing Schedules”</b>	The term shall have the meaning assigned thereto in Section 2.11.1(c)(i);

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**“Assigned Rights and Obligations”**

All of the rights, title and interest and all of the liabilities and obligations of the Generator under or in respect of the Generator Assets as at the date on which EGAT acquires the Generator Assets through the EGAT Designated Assignee in accordance with Section 17.12.2(a), other than the Retained Rights and the Retained Obligations;

**“As-Built Drawings”**

The drawings for the respective equipment and facilities, which reflect their condition as installed and Commissioned;

**“Automatic Generation Control”**

A computerized technique based at the EGAT Control Center which automatically enables frequency regulation and the optimization of overall generation costs by sending the signal to adjust the set-point adjustment of a Generating Unit’s governor;

**“Automatic Generation Voltage Control”**

A computerized technique based at the EGAT Control Center which automatically enables voltage regulation at the high voltage side of a Generating Unit or enable reactive power regulation at the high voltage side of a Generating Unit by sending the signal to adjust the set-point, which can be voltage set-point (kV) or reactive power set-point (MVar) of a Generating Unit’s AVR;

**“Availability”**

The capability of the Generator System to provide generating capacity, electrical energy and Registered Operating Characteristics to the Delivery Point for the EGAT System, taking into account such effect associated with the outages of the Generator Transmission Facilities and any effect associated with Water Supply Limitation or Tailwater Level Limitation, as applicable, and **“Available”** shall be construed accordingly;

**“Average Energy Coefficient”**

The average quantity of electrical energy (in kWh) which is produced by the Facility from a cubic meter of water as calculated in accordance with Paragraph 8 of Part IV of Schedule 17;

i)k.

<b>“Back-Up Control Center” or “BCC”</b>	The back-up control center in respect of the EGAT System, which schedules and dispatches generating and transmission facilities within the EGAT System and the Generator System as well as external interconnectors if and when the National Control Center (NCC) is not in operation;
<b>“Back-Up Energy Meter”</b>	Any or all of the Back-Up Xayaburi Energy Meters and the Back-Up Loei 2 Energy Meters, as the context may require;
<b>“Back-Up Loei 2 Energy Meter”</b>	The term shall have the meaning assigned thereto in Part I of Schedule 14;
<b>“Back-Up Xayaburi Energy Meter”</b>	The term shall have the meaning assigned thereto in Part II of Schedule 14;
<b>“Baht” or “Thai Baht” or “THB”</b>	The lawful currency of Thailand;
<b>“Billing System”</b>	The billing system which the Generator uses to prepare all relevant statements and Payment Invoices required by this Agreement;
<b>“Breach of Contract”</b>	The term shall have the meaning assigned thereto in Clause [12.1] of the Concession Agreement;

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**“Business Day”**

Any day other than a Saturday, Sunday or a public holiday in the Lao PDR or Thailand or an EGAT holiday, provided that:

- (a) an EGAT holiday shall be a day in any calendar year which EGAT shall have published and notified in writing to the Generator within fifteen (15) days after the Execution Date and otherwise before 20 December in each year with respect to the immediately subsequent calendar year;
- (b) for the purposes of making a payment by EGAT to the Generator, a Business Day shall be a day on which banks in Thailand and any bank that is located outside of Thailand that is designated by the Generator to receive the fund transfer are open for business;
- (c) for the purposes of making a payment by the Generator to EGAT, a Business Day shall be a day on which banks in Thailand, the Lao PDR, New York City, and such other city as designated in writing from time to time by the Generator, and the bank designated by EGAT to receive the fund transfer are open for business;
- (d) for the purposes of determining the Prevailing Exchange Rate, a Business Day shall be any day (other than a Saturday or Sunday) on which banks in Thailand (including the Bank of Thailand) are generally open for business; and
- (e) the Generator shall notify EGAT of any and all public holidays in the Lao PDR in writing within fifteen (15) days after the Execution Date and otherwise before 20 December in each year with respect to the immediately subsequent calendar year;

**“Capacity Default Threshold”**

In respect of the Facility, the generating capacity that is equal to seventy-five percent (75%) of the Contracted Capacity at the corresponding Operating Water Head;

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<b>“Certificate”</b>	The term shall have the meaning assigned thereto in Section 2.10.4(a)(ii);
<b>“Certificate of Readiness for Connection”</b>	In respect of any Subsystem, the certificate issued pursuant to Section 2.10.4(b);
<b>“Certificate of Readiness for Energization”</b>	In respect of any Subsystem, the certificate issued pursuant to Sections 2.10.4(c) or 2.10.4(d), as applicable;
<b>“Certificate of Readiness for Operation”</b>	In respect of any Subsystem, the certificate issued pursuant to Sections 2.10.4(e), 2.10.4(f) or 2.10.4(g), as applicable;
<b>“Change of Grid Code”</b>	Any change of the Grid Code or in the interpretation or application thereof (as evidenced in writing) from the Grid Code (or interpretation and application thereof) that is then effective and applicable to the Generator;
<b>“Change-in-Law”</b>	A Thai Change-in-Law or a Lao Change-in-Law;

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<b>“Claim”</b>	<p>Any right to:</p> <p>(a) the payment of any amount (whether quantified or unquantified);</p> <p>(b) the performance of any obligation; or</p> <p>(c) the satisfaction of any liability,</p> <p>any such right being attributable to any breach by the Generator or any counterparty to, under or in respect of the Generator Assets during the relevant period up to the date on which EGAT acquires the Generator Assets through the EGAT Designated Assignee in accordance with Section 17.12.2(a);</p>
<b>“Commercial Operation Date” or “COD”</b>	<p>Subject to Sections 2.10.4(a)(vi) and 2.10.4(i), the latest to occur of : (i) the last Acceptance Date of the Certificates of Readiness for Operation for all Generator Subsystems and all EGAT Subsystems unless otherwise agreed by the Parties, (ii) SCOD and (iii) the date on which the Generator provides Performance Security One to EGAT in accordance with Section 9.2(a);</p>
<b>“Commercial Securities Facility Agent”</b>	<p>In the event that a Security is in the form of an irrevocable bank guarantee that has been issued by more than one Thai Banks, the Thai Bank (including its successor, transferee and assignee) acting for and on behalf of all Thai Banks issuing that relevant bank guarantee as specified therein;</p>
<b>“Commissioned”</b>	<p>In respect of each Subsystem, the status of such Subsystem upon and after the acceptance of the Certificate of Readiness for Operation therefor in accordance with Sections 2.10.4(e), 2.10.4(f) or 2.10.4(g), as applicable;</p>
<b>“Commissioned Unit”</b>	<p>A Generating Unit which has been Commissioned;</p>
<b>“Commissioning Phase”</b>	<p>The term shall have the meaning assigned thereto in Section 2.10.1(d);</p>

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<b>“Commissioning Procedures”</b>	The procedures in respect of the Commissioning Testing of any Subsystem, as agreed or deemed to be agreed by the Parties in accordance with Section 2.10.2;
<b>“Commissioning Testing”</b>	The tests to be conducted in respect of a Subsystem for the purpose of the issuance of a Certificate therefor;
<b>“Committed Energy”</b>	The term shall have the meaning assigned thereto in Section 4.1.2;
<b>“Committed Energy Component” or “CEC”</b>	Any or all of the Primary Energy and Secondary Energy, as the context may require;
<b>“Common Interconnection Facilities”</b>	The equipment and facilities described in Section 2.6.1(c) and Schedule 13;
<b>“Common Interconnection Facilities Ready Date” or “CIRD”</b>	The Acceptance Date of the Certificate of Readiness for Connection in respect of the Common Interconnection Facilities;
<b>“Communication System”</b>	The term shall have the meaning assigned thereto in Section 2.8.1;
<b>“Company Termination Event”</b>	The term shall have the meaning assigned thereto in Clause [11.4] of the Concession Agreement;
<b>“Completion Test”</b>	The term shall have the meaning assigned thereto in Section 2.10.2(a)(iii);
<b>“Concession Agreement”</b>	The concession agreement between the GOL and the Generator, dated 29 <sup>th</sup> October 2010, under which the GOL issues to the Generator a concession to build, own and operate the Generator System in the Lao PDR in order to supply generating capacity and electrical energy to the EGAT System in accordance with the terms and conditions of this Agreement;
<b>“Conditions Precedent”</b>	The term shall have the meaning assigned thereto in Section 1.5.1;
<b>“Confidential Information”</b>	The term shall have the meaning assigned thereto in Section 16.1;

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<b>“Confirmation Statements”</b>	Any or all of the Generator Daily Confirmation Statements, the Generator Weekly Confirmation Statements, the EGAT Daily Confirmation Statements, and the EGAT Monthly Confirmation Statements, as the context may require;
<b>“Connection Date” or “CD”</b>	The latest to occur of the ECRD, the GCRD and the CIRD;
<b>“Construction Drawing”</b>	The drawings for the respective equipment and facilities being installed and Commissioned, which reflect their current condition at such relevant time as required by the context;
<b>“Continuous Operation Test”</b>	The test described in Paragraph 1.1 of Part IV of Schedule 17;
<b>“Continuous Operation Test Period”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1 of Part IV of Schedule 17;
<b>“Contract Year”</b>	Each calendar year comprised in the period commencing from (and including) the Commercial Operation Date until (and including) the Term Termination Date, provided that: <ul style="list-style-type: none"> <li>(i) the first Contract Year shall begin on (and including) the Commercial Operation Date and end on (and including) 31<sup>th</sup> December of that calendar year comprising the Commercial Operation Date; and</li> <li>(ii) the last Contract Year shall begin on (and including) 1<sup>st</sup> January of the last calendar year comprised in the Term and end on (and including) the Term Termination Date;</li> </ul>
<b>“Contracted Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1 of Part I of Schedule 1;
<b>“Contracted Operating Characteristics” or “COC”</b>	The contracted performance and operating characteristics as set out in Part III of Schedule 1;

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<b>“Contracted Stability Limit”</b>	The value given in Paragraph 1.2 of Part II of Schedule 1;
<b>“Contracted Supply Conditions”</b>	The requirements regarding the delivery of electrical energy from the Facility to the Delivery Point for the EGAT System, as further described in Schedule 1;
<b>“Contracted Unit Deloading Rate”</b>	The term shall have the meaning assigned thereto in Paragraph 3.3 of Part III of Schedule 1;
<b>“Contracted Unit Loading Rate”</b>	The term shall have the meaning assigned thereto in Paragraph 3.3 of Part III of Schedule 1;
<b>“Contracted Unit Primary Response”</b>	The term shall have the meaning assigned thereto in Paragraph 4 of Part III of Schedule 1;
<b>“Contracted Unit Reactive Power”</b>	The term shall have the meaning assigned thereto in Paragraph 2 of Part III of Schedule 1;
<b>“Contracted XYB Unit Maximum Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 1.2 of Part III of Schedule 1;
<b>“Contracted XYB Unit Minimum Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 1.2 of Part III of Schedule 1;
<b>“Coordinated Line Maintenance Outage”</b>	The term shall have the meaning assigned thereto in Paragraph 1.3 of Part I of Schedule 20;
<b>“Correction Point”</b>	The mid-span point of the two (2) Dead End Towers;
<b>“Cure Period”</b>	The term shall have the meaning assigned thereto in Section 9.9(a);

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<b>“Daily Additional Declared Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 1.4B of Part I of Schedule 3;
<b>“Daily Additional EE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 1.4B of Part I of Schedule 3;
<b>“Daily Additional Energy Availability Declaration”</b>	The term shall have the meaning assigned thereto in Paragraph 1.4B of Part I of Schedule 3;
<b>“Daily Additional PE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 1.4B of Part I of Schedule 3;
<b>“Daily Additional SE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 1.4B of Part I of Schedule 3;
<b>“Daily Base Declaration”</b>	The term shall have the meaning assigned thereto in Paragraph 1.4A of Part I of Schedule 3;
<b>“Daily Commissioning Program”</b>	The term shall have the meaning assigned thereto in Section 2.10.3(b)(iv);
<b>“Daily Confirmation Statements”</b>	Any or all of the Generator Daily Confirmation Statements and the EGAT Daily Confirmation Statements, as the context may require;
<b>“Daily Declared Capacity”</b>	The value of generating capacity Declared by the Generator in accordance with Paragraph 1.4.1(b) of Part I of Schedule 3, which shall be available for all Settlement Periods comprised in the relevant day except for any Machine Outage;
<b>“Daily Generation Program”</b>	The daily generation program issued by EGAT to the Generator pursuant to Section 3.8.3;

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<b>“Daily Incremental Capacity Constraint”</b>	In respect of a given day on and after the One Unit Operation Ready Date, the amount of electrical energy equal to the Daily Declared Capacity (in MW) times twenty-four (24) hours;
<b>“Daily Machine Unavailability Limited Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2.2.1 of Part II of Schedule 3;
<b>“Daily Machine Unavailability Limited Primary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2.2.2 of Part II of Schedule 3;
<b>“Daily Machine Unavailability Limited Secondary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2.2.2 of Part II of Schedule 3;
<b>“Daily Metering Statement”</b>	Any or all of the Generator Daily Metering Statements and the EGAT Daily Metering Statements, as the context may require;
<b>“Daily Tailwater Level Unavailability Limited Primary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2.2.4 of Part II of Schedule 3;
<b>“Daily Tailwater Level Unavailability Limited Secondary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2.2.4 of Part II of Schedule 3;
<b>“Daily Unavailability”</b>	The term shall have the meaning assigned thereto in Paragraph 2.1.1(A) of Part II of Schedule 3;
<b>“Daily Water Supply Unavailability Limited Primary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2.2.3 of Part II of Schedule 3;
<b>“Daily Water Supply Unavailability Limited Secondary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2.2.3 of Part II of Schedule 3;
<b>“Day Ahead Unavailability”</b>	The term shall have the meaning assigned thereto in Section 3.7.2(A)(a)(ii);

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**“Dead End Tower”**

The tower described in Paragraph 2 of Schedule 13;

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*[Handwritten signature]*

Confidential

**“Debt” or “D”**

The aggregate of:

- (a) all amounts of debt secured under the mortgages, security interests and other encumbrances granted to the Lenders pursuant to the Financing Documents at the Financial Close Date as remains outstanding, provided, however, that the actual amount of such debt that is in excess of that amount of debt scheduled in the amortization schedule set forth in the Financing Documents at the Financial Close Date to remain outstanding on the date for which the amount of Debt needs to be determined shall not constitute Debt for purposes of this Agreement (unless such excess is due to the Generator failing to pay such debt solely as a consequence of the failure of EGAT to make payment of undisputed amount due and owing to the Generator); plus
- (b) all amounts of any additional debt incurred by the Generator for additional working capital and capital repairs, modifications and/or improvements which are required pursuant to this Agreement to be incurred or undertaken by the Generator as a result of a Thai Political Force Majeure, an EGAT Force Majeure, a Change of Grid Code, and/or a Thai Change-in-Law, provided that the actual amount of such debt that is in excess of that amount of debt scheduled in the amortization schedule set forth in the Financing Documents for such financing to remain outstanding on the date for which the amount of Debt needs to be determined shall not constitute Debt for purposes of this Agreement (unless such excess is due to the Generator failing to pay such debt solely as a consequence of the failure of EGAT to make payment of undisputed amount due and owing to the Generator); plus

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- (c) all amounts of any additional debt secured under the mortgages, security interests and other encumbrances granted as part of debt financing incurred by the Generator for additional working capital and capital repairs, modifications and/or improvements which are required pursuant to this Agreement to be incurred or undertaken by the Generator as a result of a Lao Political Force Majeure, a Generator Force Majeure, and/or a Lao Change-in-Law, provided, however, that the actual amount of such debt that is in excess of that amount of debt scheduled in the amortization schedule set forth in the Financing Documents for such financing to remain outstanding on the date for which the amount of Debt needs to be determined shall not constitute Debt for purposes of this Agreement (unless such excess is due to the Generator failing to pay such debt solely as a consequence of the failure of EGAT to make payment of undisputed amount due and owing to the Generator); plus
- (d) any refinancing in the Thai capital market of those amounts denominated in Thai Baht in the Financing Documents at the Financial Close Date or denominated in Thai Baht in any additional financing subsequent thereto referenced in subparagraphs (b) and (c) herein, provided, however, that the actual amount of such debt that is in excess of that amount of debt scheduled in the amortization schedule set forth in the Financing Documents, existing as on the date that each such financing respectively first occurs, for such financing to remain outstanding on the date for which the amount of Debt needs to be determined shall not constitute Debt for purposes of this Agreement (unless such excess is due to the Generator failing to pay such debt solely as a consequence of the failure of EGAT to make payment of undisputed amount due and owing to the Generator); plus

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- (e) all amounts (other than principal) owing by the Generator to the Lenders under the Financing Documents referred to in paragraphs (a), (b), (c) and (d) of this definition of “Debt”, including interest (including default interest incurred solely as a consequence of the failure of EGAT to make payment of undisputed amount due and owing to the Generator), commission (including commitment commission and letter of credit commission), fees (including letter of credit fees, guarantee fees and agency fees), premium (including prepayment premium) and all other costs, expenses and indemnities (including interest period breakage costs, prepayment penalties, currency swap breakage costs, interest rate swap breakage costs or any other hedging breakage costs, any winding-up costs and any taxes due and owing to the Lenders under the Financing Documents referred to in paragraphs (a), (b), (c) and (d) of this definition of “Debt”);

provided, however, that in the event that the Generator obtains a one time lump sum payment of compensation for the increased costs attributable to a Thai Change-in-Law (rather than through any adjustments to the tariffs applicable to Primary Energy or Secondary Energy) pursuant to Section 12.1 or any compensation payments for the increased costs attributable to a Lao Change-in-Law and other forms of Lao Political Force Majeure regardless as to the source of such compensation, then the amount of any debt incurred to fund such increased costs that shall be included as Debt for purposes of this Agreement shall be adjusted as follows:

- (i) that portion of such compensation that is received by the Generator prior to incurring any debt through financing referenced in paragraphs (b) and (c) hereof shall reduce the total amount of such increased costs for which such debt may be incurred and be included as Debt for purposes of this Agreement; and



- (ii) with respect to any such compensation that is received by the Generator after incurring any debt through financing referenced in paragraphs (b) and (c) hereof, the Debt that existed prior to receipt of such compensation shall be reduced by that portion of such compensation that is equal on a percentage basis to that portion of such increased costs that were funded through such debt financing (rather than through equity financing);

**“Declaration”**

Either any declaration made in accordance with the Declaration Procedures or the making thereof, and the word **“Declare”** shall be construed accordingly;

**“Declaration Procedures”**

The term shall have the meaning assigned thereto in Part I of Schedule 3;

**“Declared Operating Characteristics”**

In respect of the Operating Characteristics of the Generator System, the latest value Declared by the Generator in accordance with Paragraphs 1.2, 1.3 and 1.4 of Part I of Schedule 3, which shall, upon such Declaration, supersede any prior Declared Operating Characteristics;

**“Deemed Effective Type 1 Meter Readings”**

The term shall have the meaning assigned thereto in Paragraph 1.3(d) of Part III of Schedule 14;

**“Deemed Effective Type 2 Meter Readings”**

The term shall have the meaning assigned thereto in Paragraph 1.3(e) of Part III of Schedule 14;

**“Deemed Effective Type 3 Meter Readings”**

The term shall have the meaning assigned thereto in Paragraph 1.3(f) of Part III of Schedule 14;

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- “Default Rate”** Either:
- (a) in respect of any Baht amount, a rate (expressed in percent) equal to two percentage points (2.00%) plus the Minimum Overdraft Rate at the relevant time; or
  - (b) in respect of any US Dollars amount, a rate (expressed in percent) equal to two percentage points (2.00%) plus the LIBOR at the relevant time;
- “Delay Amount”** In respect of a month, each amount of FMOA or, as the case may be, liquidated damages payable by EGAT or the Generator for that month as determined and qualified as such in accordance with Sections 9.5.3 and 9.5.4;
- “Delivery Point”** The physical point at which the Transmission Line crosses the international border between Thailand and the Lao PDR, provided that, for the purposes of application of this Agreement, the Delivery Point shall be deemed to be the Correction Point;
- “Derating”** A diminution in the active generating capacity of the Facility or any Generating Unit, as the context may require, as established pursuant to a Commissioning Testing, an Annual Testing or an Additional Testing;
- “Derived Declaration”** The term shall have the meaning assigned thereto in Paragraph 1.4 of Part I of Schedule 3;
- “Design Limits”** The term shall have the meaning assigned thereto in Part II of Schedule 11;

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<b>“Development Security”</b>	<p>Either:</p> <p>(i) in respect of the period from (and including) the Execution Date until (but excluding) the Financial Close Date, the Development Security One; or</p> <p>(ii) in respect of the period from (and including) the Financial Close Date until (but excluding) Commercial Operation Date, the Development Security Two;</p>
<b>“Development Security One”</b>	The term shall have the meaning assigned thereto in Section 9.1(b)(I);
<b>“Development Security Two”</b>	The term shall have the meaning assigned thereto in Section 9.1(b)(II);
<b>“Dispatch”</b>	<p>The act of the National Control Center or the Regional Control Center to issue instructions on behalf of EGAT directing either: (i) any or all of the Generating Units Declared Available to supply or cease supplying active power to the Delivery Point for the EGAT System; or (ii) the Generator to perform switching operation in respect of the Generator Transmission Facilities or to apply voltage instruction, over any period of time in accordance with this Agreement and the Grid Code, and <b>“Dispatched”</b> shall be construed accordingly;</p>
<b>“Dispatch Instruction”</b>	<p>An instruction issued by the National Control Center or the Regional Control Center on behalf of EGAT in accordance with this Agreement and the Grid Code in order to Dispatch any single Generating Unit or combination of the Generating Units Declared Available by the Generator, provided that the Regional Control Center shall issue any instruction regarding active power set point only when such instruction is unable to be issued by the National Control Center and the Generator is notified by the National Control Center thereof;</p>

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<b>“Dispatch Shortfall Energy Account”</b>	The term shall have the meaning assigned thereto in Section 4.3(b);
<b>“Dispatch Shortfall Payment Account”</b>	The term shall have the meaning assigned thereto in Paragraph 3(c) of Schedule 4;
<b>“Dispatch Shortfall Tariff”</b>	The term shall have the meaning assigned thereto in Paragraph 3(c) of Schedule 4;
<b>“Dual Consistency Factor”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.1 of Part III of Schedule 14;
<b>“Dual Meters”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.1 of Part III of Schedule 14;
<b>“Dual Meters Consistency Check”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.1 of Part III of Schedule 14;
<b>“Dual Meters Readings”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.1 of Part III of Schedule 14;
<b>“Effective Declared Capacity”</b>	The term shall have the meaning assigned thereto in Paragraphs 2.2 and 2.3 of Part II of Schedule 3;
<b>“Effective Type 1 Meter Readings”</b>	The term shall have the meaning assigned thereto in Paragraph 1.3(c) of Part III of Schedule 14;
<b>“Effective Type 2 Meter Readings”</b>	The term shall have the meaning assigned thereto in Paragraph 1.3(d) of Part III of Schedule 14;
<b>“Effective Unit Meter Readings”</b>	The term shall have the meaning assigned thereto in Paragraph 2 of Part III of Schedule 14;
<b>“EGAT Access Rights”</b>	The term shall have the meaning assigned thereto in Section 2.1.7(b);

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<b>“EGAT Affected FM Week”</b>	The term shall have the meaning assigned thereto in Section 3.8.1(b);
<b>“EGAT Affected Force Majeure Outage”</b>	The term shall have the meaning assigned thereto in Section 3.8.1(b);
<b>“EGAT Communication System”</b>	The term shall have the meaning assigned thereto in Section 2.8.3(A);
<b>“EGAT Connection Ready Date” or “ECRD”</b>	The latest of the Acceptance Dates of the Certificates of Readiness for Connection of the EGAT Subsystems referred to in Section 2.10.1(a)(ii) to (vii);
<b>“EGAT Construction Obligation Commencement Date” or “ECOCD”</b>	The date that is the later of: (i) the Financial Close Date; and (ii) the Scheduled Financial Close Date;
<b>“EGAT Control Center”</b>	Either or both of the National Control Center and the Regional Control Center;
<b>“EGAT Daily Confirmation Statement”</b>	The term shall have the meaning assigned thereto in Section 6.2(a);
<b>“EGAT Daily Metering Statement”</b>	The term shall have the meaning assigned thereto in Paragraph 2.2 of Part III of Schedule 14;
<b>“EGAT Designated Assignee”</b>	The company incorporated as a company limited by shares under and in accordance with the Laws of the Lao PDR, being used by EGAT as a vehicle to acquire the Generator Assets pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 which at the time of such acquisition satisfies clause 5(j) of the GOL Undertaking;
<b>“EGAT Event of Default”</b>	The term shall have the meaning assigned thereto in Section 10.1.1;
<b>“EGAT Excused FMOA Period”</b>	The term shall have the meaning assigned thereto in Section 11.7.4(b)(2);

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<b>“EGAT FM Suspension Period”</b>	The term shall have the meaning assigned thereto in Section 11.7.4(b);
<b>“EGAT FMOA Limit”</b>	The term shall have the meaning assigned thereto in Paragraph 5(A)(b)(iv) of Schedule 8, such EGAT FMOA Limit being increased pursuant to Section 9.5.4;
<b>“EGAT Force Majeure”</b>	A Non-Political Force Majeure which affects EGAT, irrespective of the jurisdiction in which it occurs;
<b>“EGAT Interconnection Facilities”</b>	The equipment and facilities described in Section 2.6.1(b);
<b>“EGAT Interconnection Facilities Ready Date” or “EIRD”</b>	The Acceptance Date of the Certificate of Readiness for Connection in respect of the EGAT Interconnection Facilities;
<b>“EGAT Monthly Confirmation Statement”</b>	The term shall have the meaning assigned thereto in Section 6.2(b);
<b>“EGAT Payment Invoice”</b>	The term shall have the meaning assigned thereto in Section 7.1.2;
<b>“EGAT Pre COD FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.7.3;
<b>“EGAT Protective System”</b>	The term shall have the meaning assigned thereto in Section 2.9.1;
<b>“EGAT Relative Delay in Commencing PostECP<sub>N</sub>”</b>	The term shall have the meaning assigned thereto in Paragraph 5(A)(b)(i) of Schedule 8 (for N = 1) and Paragraph 5(B) of Schedule 8 (for N = 2);
<b>“EGAT Relevant Period 1 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.7.4(d);
<b>“EGAT Relevant Period 2 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.7.4(d);
<b>“EGAT Relevant Period 3 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.7.4(d);

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<b>“EGAT Relevant Period 4 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.7.4(d);
<b>“EGAT Relevant Period 5 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.7.4(d);
<b>“EGAT Relevant Period 6 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.7.4(d);
<b>“EGAT SCADA System”</b>	The term shall have the meaning assigned thereto in Section 2.8.1(b);
<b>“EGAT Subsystem”</b>	The term shall have the meaning assigned thereto in Section 2.10.1(a);
<b>“EGAT System”</b>	The generation and bulk transmission power facilities (including the EGAT Transmission Facilities) controlled or used by EGAT for the purpose of generating and transmitting electricity to EGAT’s customers, including importing from external supply therefor;
<b>“EGAT System Characteristics Outage”</b>	<p>An interruption or diminution of the ability of the EGAT System to Dispatch and/or receive electrical energy from the Generator System or any disconnection of energy deliveries from the Generator System that results from the failure of the EGAT System to operate in accordance with the Operating Characteristics of the EGAT System set out in Paragraph 4 of Schedule 12, for any period save in the event that any such interruption or diminution should occur:</p> <ul style="list-style-type: none"> <li>(a) at a time when there is already subsisting a Generator System Outage and for the duration of such Generator System Outage;</li> <li>(b) as a result of or being attributable to Force Majeure; or</li> <li>(c) as a result of a Generator System Outage;</li> </ul>

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- “EGAT Transmission Facilities”** All the EGAT Subsystems referred to in Section 2.10.1(a)(i) to (vii) including, after the Acceptance Date of the Certificate of Readiness for Energization for the Common Interconnection Facilities, the Common Interconnection Facilities on the Thai side of the Delivery Point;
- “EGAT Transmission Facilities Outage”** Any outage of any element comprised in the EGAT Transmission Facilities which results in an interruption or a diminution of the ability of the EGAT System to Dispatch and/or receive electrical energy from the Generator System, for any period save in the event that any such interruption or diminution should occur:
- (a) at a time when there is already subsisting a Generator System Outage and for the duration of such Generator System Outage;
  - (b) as a result of or being attributable to Force Majeure; or
  - (c) as a result of a Generator System Outage;
- “EGAT Transmission Line”**
- (a) In respect of such period prior to the Acceptance Date of the relevant Certificate of Readiness for Energization for the Common Interconnection Facilities, the double circuit 500 kV transmission line between the Loei 2 Substation and the **Dead End Tower** in Thailand; or
  - (b) in respect of such period after the Acceptance Date of the relevant Certificate of Readiness for Energization for the Common Interconnection Facilities, the double circuit 500 kV transmission line between the Loei 2 Substation and the Delivery Point,
- all as required by Sections 2.6.3(a) and 2.6.3(b)(i);

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<b>“Energization”</b>	The capability of the EGAT Transmission Facilities, each Generating Unit (or any combination thereof) and the Generator Transmission Facilities to allow the relevant Generating Units to synchronize to the EGAT System and the EGAT System to absorb electrical energy delivered by the Generating Units;
<b>“Energization Date” or “ED”</b>	The latest of the Acceptance Dates of the Certificates of Readiness for Energization of the Subsystems referred to in Section 2.10.4(c);
<b>“Energy Availability”</b>	Any or all of PE Availability and SE Availability;
<b>“Energy Components”</b>	The term shall have the meaning assigned thereto in Section 4.1.1(b);
<b>“EPC Contracts”</b>	The principle contracts entered into by the Generator with the EPC Contractors for the construction of the Generator System;
<b>“EPC Contractors”</b>	The person or corporation defined as the EPC Contractors for the purposes of the Concession Agreement and as notified by the Generator to EGAT in writing;
<b>“Equivalent UD Period”</b>	The term shall have the meaning assigned thereto in Paragraph 1.2.3(A) of Part II of Schedule 3;
<b>“ESCOD”</b>	The term shall have the meaning assigned thereto in Paragraph 5(A)(b)(iii) of Schedule 8, and shall be applied in accordance with Section 9.5.2(f);
<b>“ESFCD”</b>	The term shall have the meaning assigned thereto in Section 8.3.2(b);
<b>“Event of Default”</b>	Any EGAT Event of Default or any Generator Event of Default;

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<b>“Exceptional Outage”</b>	The outage in respect of the Generator System associated with the relevant exceptional event that is claimed by the Generator in accordance with Paragraph 1.7 of Part I of Schedule 3;
<b>“Excess Energy”</b>	The electrical energy that is: (a) determined as Weekly Excess Energy in accordance with Paragraph 4(c) of Schedule 4; and/or (b) determined as Weekly Additional Excess Energy in accordance with Paragraph 5(d) of Schedule 4; and/or (c) the sum of the balances of the Supply Excess PE Account and the Supply Excess SE Account at the time of reconciliation of such Accounts in accordance with Paragraph 4(a) of Schedule 5;
<b>“Excess Energy Tariff”</b>	In respect of a given Contract Year, the tariff rate applicable to the Excess Energy as set out in the column titled “Excess Energy” for such given Contract Year in the Tariff Table as provided in Schedule 2;
<b>“Excess Revenue Account”</b>	The term shall have the meaning assigned thereto in Section 4.3(e);
<b>“Excused FM Delay”</b>	The term shall have the meaning assigned in Paragraph 6 of Schedule 8;
<b>“Execution Date”</b>	The date on which this Agreement has been signed by both Parties;
<b>“Facility”</b>	The seven (7) Generating Units;
<b>“Facility Dispatch Level”</b>	The term shall have the meaning assigned thereto in Section 3.8.1(c);
<b>“Fifth Generating Unit”</b>	The Generating Unit for which the Acceptance Date of the Certificate of Readiness for Energization therefor occurs on the CRD <sub>5</sub> ;
<b>“Fifth Unit Commissioning Ready Date” or “CRD<sub>5</sub>”</b>	The Acceptance Date of the fifth in time Certificate of Readiness for Energization that has been issued for any Generating Unit;

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<b>“Final Concept Design”</b>	The updated and final version of the set of documents describing the main criteria and parameters that apply to the design of the components of the works (including key dimension, sizing, ratings), general arrangement drawings, single line and schematic diagrams, in association with the Generator System as required by this Agreement, used as the basis for the detail design and construction of such Generator System to be carried out under the EPC Contracts;
<b>“Final Confirmation Statement”</b>	The term shall have the meaning assigned thereto in Section 6.5;
<b>“Final Declaration”</b>	The term shall have the meaning assigned thereto in Paragraph 1.6 of Part I of Schedule 3, as further described in Paragraph 3 of Part II of Schedule 3;
<b>“Final EE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 3.3 of Part II of Schedule 3;
<b>“Final PE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 3.3 of Part II of Schedule 3;
<b>“Final SE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 3.3 of Part II of Schedule 3;

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**“Financial Close”**

After all relevant Financing Documents required to fund, in combination with the equity contributions of the Shareholders, all of the costs then projected as required for the total development, construction and commercial operation of the Generator System have been duly executed, the delivery to EGAT by the Generator of written notification from the agent or trustee acting for the Lenders to the Generator (or any other evidence reasonably satisfactory to EGAT) that all conditions precedent to the initial draw down of funding under the Financing Documents have been satisfied or waived by the Lenders;

**“Financial Close Date” or “FCD”**

The date on which the conditions set out in Section 2.1.2 are satisfied;

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**“Financing Documents”**

The agreements executed between the Generator and the relevant financial institutions for obtaining loans, credit facilities, notes, bonds, subordinated debt and other debt financing and refinancing (excluding any and all equity, however funded, including shareholder loans and shareholder guarantees) of the development, construction, operation, maintenance and repair of the Generator System (including working capital) and such supporting documentation as is required to support such debt financing and refinancing, including debentures, finance leases, working capital facility agreements, non-shareholder guarantees, political risk insurance, credit risk insurance, security agreements, trust agreements, interest rate hedging agreements, foreign exchange hedging agreements and any other hedging documents, intercreditor agreements, subordination agreements and direct agreements. For the avoidance of doubt, any agreements entered into in respect of any additional debt finance incurred by the Generator for additional working capital and capital repairs, modifications and/or improvements required by this Agreement incurred or undertaken by the Generator as a result of Force Majeure, Change of Grid Code, and/or Change-in-Law under this Agreement after Financial Close shall constitute Financing Documents;

**“First Generating Unit”**

The Generating Unit for which the Acceptance Date of the Certificate of Readiness for Energization therefor occurs on the CRD<sub>1</sub>;

**“First Payment”**

The term shall have the meaning assigned thereto in Section 2.1.3;

**“First Payment Date”**

The date on which the First Payment occurs;

**“First Security”**

The term shall have the meaning assigned thereto in Section 9.1(b)(i);

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<b>“First Unit Commissioning Ready Date” or “CRD<sub>1</sub>”</b>	The Acceptance Date of the first in time Certificate of Readiness for Energization that has been issued for any Generating Unit;
<b>“Force Majeure”</b>	The term shall have the meaning assigned thereto in Section 11.1(a);
<b>“Force Majeure Offset Amounts” or “FMOA”</b>	The amounts required to be paid by one Party to the other Party in accordance with Sections 9.5, 11.7 and 11.8;
<b>“Forced Outage PE Unavailability”</b>	The term shall have the meaning assigned thereto in Section 9.6.2(c)(i);
<b>“Forced Outage SE Unavailability”</b>	The term shall have the meaning assigned thereto in Section 9.6.2(c)(ii);
<b>“Fourth Generating Unit”</b>	The Generating Unit for which the Acceptance Date of the Certificate of Readiness for Energization therefor occurs on the CRD <sub>4</sub> ;
<b>“Fourth Security”</b>	The term shall have the meaning assigned thereto in Section 9.1(b)(ii)(3);
<b>“Fourth Unit Commissioning Ready Date” or “CRD<sub>4</sub>”</b>	The Acceptance Date of the fourth in time Certificate of Readiness for Energization that has been issued for any Generating Unit;

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**“Full Calendar Month”**

- (a) In respect of a Full Calendar Month starting on (and including) a given day in a calendar month, the period starting on (and including) such given day and ending on (and including) either:
- (i) if there is a numerically corresponding day in the immediately succeeding calendar month, the date that precedes such numerically corresponding day in the immediately succeeding calendar month; or
  - (ii) if there is no numerically corresponding day in the immediately succeeding calendar month, the last day in the immediately succeeding calendar month; or
- (b) in respect of a Full Calendar Month ending on (and including) a given day in a calendar month, the period starting on (and including) either:
- (i) if there is a numerically corresponding day in the immediately preceding calendar month, the date that follows such numerically corresponding day in the immediately preceding calendar month; or
  - (ii) if there is no numerically corresponding day in the immediately preceding calendar month, the first day of the same calendar month comprising such given day,
- and ending on (and including) such given day,

as the case may be (and references to **“Full Calendar Months”** shall be construed accordingly);

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**“Fully Dispatchable”**

In respect of an entire 24-hour period that the relevant Derived Declaration relates, the capability of a Generating Unit to continuously comply with EGAT’s Dispatch in order to generate and deliver electrical energy at any time and at any level for the whole range of generating capacity Declared by the Generator for such Generating Unit and such relevant time;

**“Generating Unit” or “Unit”**

Each of the seven (7) hydro-powered electrical energy generating units having nominal capacity as specified in Paragraph 1.1 of Part II of Schedule 11, including the associated transformer and switching apparatus needed for the transmission of electrical energy generated by such generating unit through the Transmission Line to the Delivery Point for the EGAT System;

**“Generating Unit N”**

Any particular Generating Unit for which the order of the Acceptance Dates of the Certificates of Readiness for Energization has no significance;

**“Generation Shortfall”**

For the purpose of Declaration and determination of the adjustment in respect of each type of Unavailability, the term shall have the meaning assigned thereto in Paragraphs 3.2.1(a) and 3.2.1(b) of Part I of Schedule 3, respectively;

**“Generator”**

Xayaburi Power Company Limited;

**“Generator Actual Stability Data”**

The data of the Generator System that is required for determining the Registered Stability Limit, being the latest values of the relevant parameters that result upon completion of the Commissioning Testing, the Additional Testing or the Annual Testing, as applicable, in accordance with the provisions of Schedule 17, or where no such tests have been performed, the “as built” state of the Generator System as required for such determination;

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- “Generator Affected FM Week”** The term shall have the meaning assigned thereto in Section 3.6.8(a);
- “Generator Affected Force Majeure Outage”** The term shall have the meaning assigned thereto in Section 3.6.8(a);
- “Generator Assets”** All of the assets (other than cash and other liquid assets), owned by the Generator and all rights, titles, interests and benefits of the Generator, which is associated with the Generator System and the Generator-EdL System, comprising, including:
- (a) the property rights associated with the Site on which the Generator System and the Generator-EdL System are or will be located, including the property rights to the Site under the Concession Agreement, the Lease Agreement and all other legal instruments related thereto;
  - (b) all rights, titles, interests and benefits of the Generator pursuant or related to the Project Agreements, including the Concession Agreement in effect at the time EGAT acquires the Generator Assets;
  - (c) all rights of the Generator under all Governmental Approvals applicable to the Generator System and the Generator-EdL System;
  - (d) all plant equipment and equipment associated with the Generator System and the Generator-EdL System, including the Facility and the Generator Transmission Facilities;
  - (e) spare parts;
  - (f) the drawings, technical specifications, electrical diagrams, piping diagrams, and protection systems, subject to the same copyright license or similar intellectual property right that then applied to the Generator;

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- (g) the commissioning reports and the operating and maintenance manuals and systems, subject to the same copyright license or similar intellectual property right that then applied to the Generator;
- (h) the operations and maintenance records and quality assurance plans, together with all other quality assurance documents and records;
- (i) any property and intellectual property rights including patent rights inherent in any of the foregoing for the purpose of the design, construction, operation, maintenance and/or repair of the Generator System and the Generator-EdL System, subject to the same copyright license or similar intellectual property right that then applied to the Generator; and
- (j) all data and information required of the Generator in respect of this Agreement and the Concession Agreement, subject to the same copyright license or similar intellectual property right that then applied to the Generator;

**“Generator Communication System”**

The term shall have the meaning assigned thereto in Section 2.8.3(B);

**“Generator Connection Ready Date” or “GCRD”**

The latest of the Acceptance Dates of the Certificates of Readiness for Connection of the Generator Subsystems (i) to (viii) referred to in Section 2.10.2(b)(ii);

**“Generator Daily Confirmation Statement”**

The term shall have the meaning assigned thereto in Section 6.1(a);

**“Generator Daily Metering Statement”**

The term shall have the meaning assigned thereto in Paragraph 2.2 of Part III of Schedule 14;

**“Generator Event of Default”**

The term shall have the meaning assigned thereto in Section 10.2.1;

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<b>“Generator Excused FMOA Period”</b>	The term shall have the meaning assigned thereto in Section 11.8.4(b)(2);
<b>“Generator FM Suspension Period”</b>	The term shall have the meaning assigned thereto in Section 11.8.4(b);
<b>“Generator FMOA Limit”</b>	The term shall have the meaning assigned thereto in Paragraph 5(A)(b)(v) of Schedule 8, such Generator FMOA Limit being increased pursuant to Section 9.5.4;
<b>“Generator Force Majeure”</b>	A Non-Political Force Majeure which affects the Generator, irrespective of the jurisdiction in which it occurs;
<b>“Generator Forced Outage”</b>	The term shall have the meaning assigned thereto in Section 3.6.5;
<b>“Generator Interconnection Facilities”</b>	The equipment and facilities described in Section 2.6.1(b);
<b>“Generator Interconnection Facilities Ready Date” or “GIRD”</b>	The Acceptance Date of the Certificate of Readiness for Connection in respect of the Generator Interconnection Facilities;
<b>“Generator Maintenance Outage”</b>	The term shall have the meaning assigned thereto in Section 3.6.3;
<b>“Generator Metering System”</b>	The equipment as specified in Part II of Schedule 14, including: (a) the Xayaburi Metering System; and (b) the Unit Metering System;
<b>“Generator Payment Invoice”</b>	The term shall have the meaning assigned thereto in Section 7.1.1;
<b>“Generator Planned Outage”</b>	A Machine Outage scheduled to occur and complete at specific times, all of which having been approved in writing by EGAT in accordance with Section 3.6.1;
<b>“Generator Pre COD FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.8.3;

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<b>“Generator Protective System”</b>	The term shall have the meaning assigned thereto in Section 2.9.1;
<b>“Generator Reference Stability Data”</b>	The data of the Generator System that is required for determining the Contracted Stability Limit, which shall be consistent with the data contained in Part II and Part III of Schedule 1;
<b>“Generator Relevant Period 1 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.8.4(d);
<b>“Generator Relevant Period 2 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.8.4(d);
<b>“Generator Relevant Period 3 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.8.4(d);
<b>“Generator Relevant Period 4 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.8.4(d);
<b>“Generator Relevant Period 5 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.8.4(d);
<b>“Generator Relevant Period 6 FMOA Account”</b>	The term shall have the meaning assigned thereto in Section 11.8.4(d);
<b>“Generator SCADA System”</b>	The term shall have the meaning assigned thereto in Section 2.8.1(a);
<b>“Generator Short Notice Outage”</b>	The term shall have the meaning assigned thereto in Section 3.6.4;
<b>“Generator Stability Data”</b>	The input data as required by EGAT’s software to properly model the Generator System as connected to the EGAT System for purposes of network simulations and in particular for the calculation of the Registered Stability Limit;
<b>“Generator Subsystem”</b>	The term shall have the meaning assigned thereto in Section 2.10.1(b);

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**“Generator System”**

As the context requires, all of:

- (a) the Generator Subsystems referred to in Section 2.10.1(b)(i) to (xv) excluding, after the Acceptance Date of the Certificate of Readiness for Energization for the Common Interconnection Facilities, the Common Interconnection Facilities on the Thai side of the Delivery Point; and
- (b) the dam, spillways, water tunnels, channels and shafts, the power house and all associated structures, plant, equipment and facilities located at the Site for the generating and delivery of electrical energy by the Generator;

**“Generator System Outage”**

Any event causing Unavailability, including such events that require disconnection or limitation of energy deliveries to the Delivery Point for the EGAT System, for any period save in the event that any such Unavailability should occur:

- (a) at a time when there is already subsisting an EGAT Transmission Facilities Outage or an EGAT System Characteristics Outage and for the duration of such EGAT Transmission Facilities Outage or EGAT System Characteristics Outage;
- (b) as a result of or being attributable to any Force Majeure; or
- (c) as a result of an EGAT Transmission Facilities Outage or an EGAT System Characteristics Outage;

**“Generator Transformer”**

The term shall have the meaning assigned thereto in Paragraph 1.2 of Part II of Schedule 11;

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**“Generator Transmission Facilities”**

All the Generator Subsystems referred to in Sections 2.10.1(b)(i) to (viii) which shall exclude, after the Acceptance Date of the Certificate of Readiness for Energization for the Common Interconnection Facilities, the Common Interconnection Facilities on the Thai side of the Delivery Point;

**“Generator Transmission Line”**

(a) In respect of such period prior to the Acceptance Date of the relevant Certificate of Readiness for Energization for the Common Interconnection Facilities, the double circuit 500 kV transmission line between the Xayaburi Switchyard and the **Dead End** Tower in the Lao PDR; or

(b) in respect of such period on and after the Acceptance Date of the relevant Certificate of Readiness for Energization for the Common Interconnection Facilities, the double circuit 500 kV transmission line between the Xayaburi Switchyard and the Delivery Point,

all as required by Sections 2.6.3(a)(ii) and 2.6.3(b)(ii);

**“Generator Unplanned Outage”**

A Generator System Outage that is not a Generator Planned Outage;

**“Generator Weekly Confirmation Statement”**

The term shall have the meaning assigned thereto in Section 6.1(b);

**“Generator’s LE2 Meter Procurement Cost”**

The term shall have the meaning assigned thereto in Section 2.7.1(a)(iii)(A);

**“Generator-EdL System”**

The generating facility located at the Site installed with one (1) generating unit having an approximate nominal capacity of 60 MW which delivers electrical energy to the power system of Electricité du Laos;

**“Global Trial Run Test”**

The term shall have the meaning assigned thereto in Section 2.10.4(g)(iii) and Paragraph 2 of Part IV of Schedule 17;

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<b>“GOL Undertaking”</b>	The term shall have the meaning assigned thereto in Section 1.5.1(d);
<b>“Government of the Lao PDR” or “GOL”</b>	The government of the Lao PDR, including all Lao Governmental Authorities;
<b>“Government of Thailand” or “GOT”</b>	The government of Thailand, including all Thai Governmental Authorities;
<b>“Governmental Approval”</b>	Any approval, consent, concession, decree, permit, license, waiver, privilege of, or exemption from, or filing with, or notice to, any Governmental Authority;
<b>“Governmental Authority”</b>	Any Thai Governmental Authority or any Lao Governmental Authority;
<b>“Grid Code”</b>	The code setting forth the planning procedures, connection conditions, operating procedures, scheduling and dispatch procedures and general conditions regulating the supply of electrical energy to the EGAT System by independent power producers as published by EGAT and attached hereto in Appendix A, as the same may from time to time be amended, modified, supplemented or replaced;
<b>“Gross Electrical Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 1(C)(c) of Part II of Schedule 7;
<b>“GSCOD”</b>	The term shall have the meaning assigned thereto in Paragraph 5(A)(b)(ii) of Schedule 8, and shall be applied in accordance with Section 9.5.2 (f);
<b>“Imported Energy”</b>	With respect to any period, the electrical energy (in MWh) transmitted from the EGAT System to the Generator System, referred to at the Delivery Point, as determined pursuant to Section 5.4.1;

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<b>“Incremental Capacity”</b>	With respect to a given Incremental Capacity Period, the generating capacity of the Facility that is greater than the Daily Declared Capacity by an amount up to the relevant Incremental Capacity Differential specified in Table 1.4.3 of Part III of Schedule 1 (Incremental Capacity Differential Table);
<b>“Incremental Capacity Differential”</b>	In respect of the given duration (in hours) for the relevant Incremental Capacity Period and a given Daily Declared Capacity, the value of generating capacity (in MW) that is in excess of the relevant Daily Declared Capacity that the Generator is obliged to provide to EGAT and to make Available for EGAT’s Dispatch in accordance with the terms and conditions of this Agreement;
<b>“Incremental Capacity Period”</b>	With respect to a given day on and after the One Unit Operation Ready Date, the time intervals within such day that EGAT requests the Generator to provide Incremental Capacity, provided that the total duration of all Incremental Capacity Periods in any given day shall not exceed twelve (12) hours;
<b>“Information Tests”</b>	The term shall have the meaning assigned thereto in Section 2.10.2(a)(ii);
<b>“Initial First Period”</b>	The twelve (12) Full Calendar Month period commencing from (and including) the Commercial Operation Date;
<b>“Initial First Period Maintenance Outage Allowance”</b>	The term shall have the meaning assigned thereto in Paragraph 5.2.2(a) of Part I of Schedule 1;
<b>“Initial First Period Planned Outage Program”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.1(a) of Part I of Schedule 3;
<b>“Initial Period Planned Outage Program”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.1 of Part I of Schedule 3;

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<b>“Initial Registered Capacity”</b>	The term shall have the meaning assigned thereto in Section 9.5.7(a);
<b>“Initial Second Period”</b>	The period after the Initial First Period until (and including) the end of the second Contract Year;
<b>“Initial Second Period Maintenance Outage Allowance”</b>	The term shall have the meaning assigned thereto in Paragraph 5.2.2(b) of Part I of Schedule 1;
<b>“Initial Second Period Planned Outage Program”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.1(b) of Part I of Schedule 3;
<b>“Insurance Assignment”</b>	The term shall have the meaning assigned thereto by Section 18.3.4(a);
<b>“Interconnection Design Criteria”</b>	The design criteria for the Interconnection Facilities set out in Paragraph 4 of Schedule 13;
<b>“Interconnection Facilities”</b>	The term shall have the meaning assigned thereto in Section 2.6.1(a);
<b>“Interim Declaration”</b>	The term shall have the meaning assigned thereto by Paragraph 1.5 of Part I of Schedule 3;

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**“Lao Change-in-Law”**

The occurrence of any of the following after the Execution Date:

- (a) the enactment of any new Law of the Lao PDR;
- (b) the modification or repeal of any Law of the Lao PDR;
- (c) the application to either Party and/or their respective facilities and equipment relevant to performance of their respective obligations hereunder of any Law of the Lao PDR which had been enacted but that had not become effective prior to the execution of this Agreement; and
- (d) a change in the interpretation or application of Law of the Lao PDR by a Lao Governmental Authority;

provided, however, that the first interpretation or the first application after the Execution Date by a Lao Governmental Authority of a Law of the Lao PDR that was in force on the Execution Date but has never been interpreted or applied on any date prior to the Execution Date shall not constitute a Lao Change-in-Law;

**“Lao Governmental Authority”**

The government, any governmental department, ministry, commission, board, bureau, agency, regulatory authority, instrumentality, judicial, legislative or administrative body of the Lao PDR or any subdivision of any of the foregoing;

**“Lao PDR”**

Lao People’s Democratic Republic;

**“Lao Political Force Majeure”**

The term shall have the meaning assigned thereto in Section 11.1(b);

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- “Law”** The constitution of Thailand or the Lao PDR or any published law, legislation, statute, act, Royal decree, rule, ordinance, judgment, order, treaty, regulation, directive, requirement, other governmental restriction or announcement or any interpretation thereof enacted or issued by any Governmental Authority (but excluding the Grid Code);
- “Lease Agreement”** The lease agreement entered into between the GOL and the Generator, under which the GOL grants exclusive and/or utilization rights to the Generator in respect of various areas in the Lao PDR in accordance with the terms and conditions therein for the Generator to develop, operate and maintain the Project in order to supply generating capacity and electrical energy to the EGAT System in accordance with the terms and conditions of this Agreement;
- “Lender”**
- (i) Any financial institution (including its successor, transferee or assignee) which is a party to any of the Financing Documents that has a security interest in the Generator Assets by virtue of being a party to such Financing Documents; and/or
  - (ii) any trustee (including its successor, transferee or assignee) acting for and on behalf of any financial institution, corporate institution, investment funds and/or individuals in respect of any secured Thai Baht denominated capital market instrument issued by the Generator;
- “Loei 2 Metering System”** The term shall have the meaning assigned thereto in Part I of Schedule 14;
- “Loei 2 Metering Point”** The location of the energy meters comprised in the Loei 2 Metering System situated at the Loei 2 Substation in Thailand;
- “Loei 2 Substation”** The term shall have the meaning assigned thereto in Paragraph 3 of Schedule 12;

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**“LIBOR”**

In relation to any amount owing by either EGAT or the Generator under this Agreement on which interest is to accrue for each day that such amount is owing: (i) the percentage rate per annum equal to the offered quotation which appears on the page of the Reuters screen which displays an average British Bankers Association Interest Settlement Rate for overnight deposits in US Dollars of the relevant amount on the London interbank market (such page being currently “3750”) as of 11.00 a.m. London time on the day immediately prior to such day on which interest is to accrue or, if such page or service shall cease to be available, such other page or such other service for the purpose of displaying an average British Bankers Association Interest Settlement Rate for US Dollars as the Generator, after consultation and agreement with EGAT, shall select; or (ii) if no quotation for overnight deposits in US Dollars was displayed and the Generator and EGAT have not selected an alternative service on which a quotation is displayed, the arithmetic mean (rounded upwards to four decimal places) of the rates at which each of the Reference Banks was offering to prime banks for overnight deposits in US Dollars of the relevant amount in the London interbank market as of 11.00 a.m. London time on the day immediately prior to such day on which interest is to accrue;

**“Line Loss Ratio”**

The term shall have the meaning assigned thereto in Paragraph 1(B) of Part II of Schedule 7;

**“Line Maintenance Outage”**

The outage of either or both of the two (2) transmission circuits of the EGAT Transmission Line and the corresponding transmission circuit or circuits of the Generator Transmission Line in order to carry out the maintenance activities in respect of the EGAT Transmission Line and/or the Generator Transmission Line;

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<b>“Logging Period”</b>	The term shall have the meaning assigned thereto in Tables 14.1 and 14.2 of Schedule 14;
<b>“Machine Availability”</b>	The capability of the Facility or each Generating Unit to provide generating capacity, electrical energy and Operating Characteristics to the Delivery Point for the EGAT System, taking into account the capability of the Generator Transmission Line but irrespective of any effect associated with Water Supply Limitation and/or Tailwater Level Limitation, as applicable, and <b>“Machine Unavailability”</b> shall be construed accordingly;
<b>“Machine Outage”</b>	The term shall have the meaning assigned thereto in Section 3.6(1);
<b>“Machine Limitation”</b>	The limitation of the capability of the Facility to provide the Registered Capacity due to any limit, outage, defect or deficiency associated with one or more Generating Units and/or the Generator Transmission Facilities;
<b>“Main Control Room”</b>	The control room for the operation of the Generator System;
<b>“Main Energy Meter”</b>	Any or all of the Main Xayaburi Energy Meters, Main Unit Energy Meters and the Main Loei 2 Energy Meters, as the context may require;
<b>“Main Xayaburi Energy Meter”</b>	The term shall have the meaning assigned thereto in Part II of Schedule 14;
<b>“Main Loei 2 Energy Meter”</b>	The term shall have the meaning assigned thereto in Part I of Schedule 14;
<b>“Maintenance Outage Allowance”</b>	Any or all of the Initial First Period Maintenance Outage Allowance, the Initial Second Period Maintenance Outage Allowance and the Annual Maintenance Outage Allowance, as the context may require;
<b>“Maintenance Outage PE Unavailability”</b>	The term shall have the meaning assigned thereto in Section 9.6.4(d)(i);

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<b>“Maintenance Outage SE Unavailability”</b>	The term shall have the meaning assigned thereto in Section 9.6.4(d)(ii);
<b>“Maintenance Type”</b>	Any type of maintenance more particularly described in Schedule 20;
<b>“Make-Up”</b>	The accounting of the electrical energy generated and delivered from the Facility to the Delivery Point for the EGAT System in order to recover the Accumulated Dispatch Shortfall Energy in accordance with Section 4.5 and Paragraph 4(a) of Schedule 4;
<b>“Material Adverse Effect”</b>	For the purposes of Section 10, any consequence of a breach or default by one Party of its respective obligations pursuant to this Agreement which materially and adversely affects either the ability of the non-defaulting Party to exercise its rights or to perform its obligations under this Agreement or which otherwise deprives the non-defaulting Party of a substantial or major portion of the benefits it is otherwise contractually entitled to derive from the performance by the defaulting Party of its obligations under this Agreement;
<b>“Maximum Daily Declared Capacity”</b>	The forecast maximum value of all Daily Declared Capacity for the relevant week anticipated by the Generator and contained in the Annual Declaration and the Weekly Declaration, as described in Paragraphs 1.1.2(c)(ii) and 1.3.3(a) of Part I of Schedule 3, respectively;
<b>“Meter Reconciliation Statement”</b>	The report prepared by the Generator with respect to any adjustment of the reading of the relevant Metering Equipment in accordance with Section 2.7.6(a);
<b>“Meter Reading”</b>	In respect of a given energy meter and a given period, the cumulative recorded value of electrical energy in respect of such given period, corresponding to the difference of the readings of the relevant energy meter that have been recorded at the beginning and the end of such given period, respectively;

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<b>“Meter Reading Check Procedures”</b>	The term shall have the meaning assigned thereto in Section 2.7.5(b);
<b>“Metering Equipment”</b>	Any or all equipment comprised in the Metering System, as the context may require;
<b>“Metering System”</b>	Any or all of the Loei 2 Metering System, the Generator Metering System and the Water Measuring System, as the context may require;
<b>“Milestone Dates”</b>	The dates specified in Section 8.2;
<b>“Minimum Daily Declared Capacity”</b>	The forecast minimum value of all Daily Declared Capacity for the relevant week anticipated by the Generator and contained in the Annual Declaration and the Weekly Declaration as described in Paragraphs 1.1.2(c)(ii) and 1.3.3(a) of Part I of Schedule 3, respectively;
<b>“Minimum Overdraft Rate”</b>	The arithmetic average rate (expressed in per cent per annum) at which the Reference Banks are offering overdraft facilities (in Baht) to their respective prime customers;
<b>“Month End Period”</b>	The first portion of an Overlapping Week for which all days comprised therein fall within the first calendar month relating to such Overlapping Week;
<b>“Month End Supply”</b>	The term shall have the meaning assigned thereto in Section 4.4.3(b);
<b>“Month Start Period”</b>	The last portion of an Overlapping Week for which all days comprised therein fall within the second calendar month relating to such Overlapping Week;
<b>“Month Start Supply”</b>	The term shall have the meaning assigned thereto in Section 4.4.3(c);
<b>“Monthly Base Energy Payment”</b>	The term shall have the meaning assigned thereto in Section 5.2.1, as calculated in accordance with Paragraph 1(b) of Schedule 5;

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<b>“Monthly Energy Payment”</b>	The term shall have the meaning assigned thereto in Section 5.2;
<b>“Monthly Excess Revenue”</b>	The term shall have the meaning assigned thereto in Section 4.3(e);
<b>“Monthly Minimum PE Guarantee”</b>	The term shall have the meaning assigned thereto in Paragraph 5.1.1(i) of Part I of Schedule 1;
<b>“Monthly Settled Energy”</b>	The term shall have the meaning assigned thereto in Section 4.4.3(e);
<b>“Monthly Settled Energy Target”</b>	The term shall have the meaning assigned thereto in Section 4.4.2(b);
<b>“Monthly Supply”</b>	The term shall have the meaning assigned thereto in Section 4.4.3(d);
<b>“Monthly Supply Excess Energy”</b>	Either or both of the Monthly Supply Excess Primary Energy and the Monthly Supply Excess Secondary Energy, as the context may require;
<b>“Monthly Supply Excess Payment”</b>	Either or both of the Monthly Supply Excess PE Payment and the Monthly Supply Excess SE Payment, as the context may require;
<b>“Monthly Supply Excess PE Payment”</b>	The term shall have the meaning assigned thereto in Paragraph 6(b) of Schedule 4;
<b>“Monthly Supply Excess Primary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 6(a) of Schedule 4;
<b>“Monthly Supply Excess SE Payment”</b>	The term shall have the meaning assigned thereto in Paragraph 6(b) of Schedule 4;
<b>“Monthly Supply Excess Secondary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 6(a) of Schedule 4;
<b>“Monthly Unavailability”</b>	The term shall have the meaning assigned thereto in Paragraph 3.3 of Part I of Schedule 3;

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<b>“MU-AD Period”</b>	The period starting from (and including) the first day of the calendar month in which the date that is five (5) Full Calendar Months prior to the Scheduled Termination Date falls until (and including) the last day of the calendar month in which the date that is three (3) Full Calendar Months prior to the Scheduled Termination Date falls;
<b>“MU-SO Period”</b>	The period following the MU-AD Period until the end of the Term;
<b>“N<sup>th</sup> Generating Unit”</b>	For the purpose of calculating the liquidated damages and/or Force Majeure Offset Amounts in accordance with Section 9.5, any of the First Generating Unit, the Second Generating Unit, the Third Generating Unit, the Fourth Generating Unit, the Fifth Generating Unit, the Sixth Generating Unit or the Seventh Generating Unit, as the context may require;
<b>“N<sup>th</sup> Unit Commissioning Ready Date” or “CRD<sub>N</sub>”</b>	Any of the CRD <sub>1</sub> , CRD <sub>2</sub> , CRD <sub>3</sub> , CRD <sub>4</sub> , CRD <sub>5</sub> , CRD <sub>6</sub> , or CRD <sub>7</sub> , as the context may require;
<b>“N<sup>th</sup> Unit EGAT FM Period”</b>	The term shall have the meaning assigned thereto in Section 9.5.3(c)(i);
<b>“N<sup>th</sup> Unit EGAT LD Period”</b>	The term shall have the meaning assigned thereto in Section 9.5.3(c)(i);
<b>“N<sup>th</sup> Unit Generator FM Period”</b>	The term shall have the meaning assigned thereto in Section 9.5.3(c)(ii);
<b>“N<sup>th</sup> Unit Generator LD Period”</b>	The term shall have the meaning assigned thereto in Section 9.5.3(c)(ii);

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<b>“National Control Center” or “NCC”</b>	The national control center in respect of the EGAT System, which is located, as at the Execution Date, at the EGAT Head Office, Bang Kruai, Nonthaburi, Thailand, or at such other location as may be designated in writing from time to time by EGAT to the Generator, and which schedules and dispatches generating and transmission facilities within the EGAT System and the Generator System as well as external interconnectors;
<b>“Net Electrical Energy”</b>	With respect to any period after the Commercial Operation Date, the electrical energy (in MWh) delivered from the Facility to the Delivery Point for the EGAT System as Dispatched by EGAT, determined in accordance with Paragraph 3 of Part II of Schedule 7;
<b>“Non-Acceptance Notification”</b>	The term shall have the meaning assigned thereto in Section 2.10.4(a)(iii)(2);
<b>“Non-Political Force Majeure”</b>	A Force Majeure which is neither a Lao Political Force Majeure nor a Thai Political Force Majeure;
<b>“Non Overlapping Week”</b>	Any given week (from Monday to Sunday) during the Term for which all seven (7) days comprised therein, or a lesser number of days comprised therein for the first week after the COD and the last week of the Term, as applicable, fall within the same calendar month;
<b>“Notification Time Factor”</b>	The term shall have the meaning assigned thereto in Section 9.6.3(c)(iii);
<b>“Notified Outage Finish Time”</b>	In respect of a Generator Short Notice Outage or a Generator Forced Outage, the term shall have the meaning assigned thereto in Section 3.6.2(c);
<b>“Notified Outage Start Time”</b>	In respect of a Generator Short Notice Outage or a Generator Forced Outage, the term shall have the meaning assigned thereto in Section 3.6.2(c);

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<b>“Notifying Period”</b>	The term shall have the meaning assigned thereto in Section 3.7.2(B)(c);
<b>“On-Line Testing”</b>	The term shall have the meaning assigned thereto in Paragraph 2 of Part VI of Schedule 17;
<b>“One Unit Operation Ready Date”</b>	The Acceptance Date of the first in time Certificate of Readiness for Operation that has been issued for any Generating Unit;
<b>“Operating Characteristics”</b>	Either: (i) in respect of the Generator, the performance and operating characteristics of the Generator System as set out in Part III of Schedule 1; or (ii) in respect of EGAT, the performance and operating characteristics of the EGAT System as set out in Schedule 12;
<b>“Operating Water Head”</b>	The difference between the water level at the upstream pond and that at the tailrace, as measured by the Water Measuring System;
<b>“Operational Limitations”</b>	The term shall have the meaning assigned thereto in Section 3.5.1(b)(i);
<b>“Original Outage Finish Time”</b>	The term shall have the meaning assigned thereto in Section 3.6.9;
<b>“Original Outage Start Time”</b>	The term shall have the meaning assigned thereto in Section 3.6.9;
<b>“Overlapping Week”</b>	Any given week during the Term for which all seven (7) days comprised therein, or a lesser number of days comprised therein for the first and last week, as applicable, fall within two consecutive calendar months;
<b>“O&amp;M Contract”</b>	The agreement between the Generator and the O&M Contractor for the operation and maintenance of the Generator System;

<b>“O&amp;M Contractor”</b>	The term shall have the meaning assigned thereto in Section 3.10.1;
<b>“Party”</b>	A party to this Agreement and its legal successor or permitted assignee;
<b>“Parallel Meters Consistency Check”</b>	The checks on the consistency of the Meter Readings more particularly described in Paragraph 1.2 of Part III of Schedule 14;
<b>“Parallel Operation Condition”</b>	The term shall have the meaning assigned thereto in Paragraph 1.2 of Part III of Schedule 14;
<b>“Payment Invoice”</b>	Either a Generator Payment Invoice, an EGAT Payment Invoice or both of them as the context may require;
<b>“PE Availability”</b>	For any time period after the Commercial Operation Date, the Availability of Primary Energy (expressed in MWh);
<b>“PE Based LD Rate”</b>	In respect of liquidated damages due under Sections 9.5 and 9.6 for any month in a Contract Year, twenty-three point seven per cent (23.7%) of the PE Tariff for that month in the respective currency per kWh;
<b>“PE Period”</b>	For the period starting from (and including) the One Unit Operation Ready Date, the period from 6 a.m. to 10 p.m. on any Weekday;
<b>“PE Tariff”</b>	In respect of a given Contract Year, the tariff rate applicable to the Primary Energy as set out in the column titled “Primary Energy” for such given Contract Year in the Tariff Table as provided in Schedule 2;

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<b>“Performance Security”</b>	<p>Either:</p> <p>(i) in respect of the period from (and including) the Commercial Operation Date until (and including) the last day of the 15-year period commencing from (and including) the Commercial Operation Date, such period being extended pursuant to any Force Majeure occurring within such 15-year period, the Performance Security One; or</p> <p>(ii) in respect of the period from (but excluding) the last day of the 15-year period commencing from (and including) the Commercial Operation Date (subject to extension pursuant to any Force Majeure occurring within such 15-year period) until the end of the Term, the Performance Security Two;</p>
<b>“Performance Security One”</b>	The term shall have the meaning assigned thereto in Section 9.2(a)(i);
<b>“Performance Security Two”</b>	The term shall have the meaning assigned thereto in Section 9.2(a)(ii);
<b>“Person”</b>	The term shall have the meaning assigned thereto in Section 1.2.2;
<b>“Political Force Majeure”</b>	Any Lao Political Force Majeure or any Thai Political Force Majeure;
<b>“Post COD Testing”</b>	Either the Annual Testing or the Additional Testing, as further described in Section 2.11 and Part VI of Schedule 17;
<b>“Post COD Testing Procedures”</b>	The term shall have the meaning assigned thereto in Section 2.11.1(b)(ii);
<b>“Post Event Notice”</b>	A statement given by EGAT in a format described in Schedule 28 describing such events as provided in Section 3.5.7;
<b>“Post 29-Year FM Period”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(d);

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<b>“Post-Energization Commissioning”</b>	The term shall have the meaning assigned thereto in Section 2.10.1(c)(iii);
<b>“Post-Energization Commissioning Phase”</b>	The term shall have the meaning assigned thereto in Section 2.10.1(d)(iii);
<b>“Pre COD FMOA Clearing Period”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(a)(ii);
<b>“Pre Declared Unavailability”</b>	The term shall have the meaning assigned thereto in Section 3.7.2(A)(a);
<b>“Pre Declared Unavailability Period” or “PD Period”</b>	An Unavailability Period that is associated with Pre Declared Unavailability;
<b>“Pre-Connection Commissioning”</b>	The term shall have the meaning assigned thereto in Section 2.10.1(c)(i);
<b>“Pre-Connection Commissioning Phase”</b>	The term shall have the meaning assigned thereto in Section 2.10.1(d)(i);
<b>“Pre-Energization Commissioning”</b>	The term shall have the meaning assigned thereto in Section 2.10.1(c)(ii);
<b>“Pre-Energization Commissioning Phase”</b>	The term shall have the meaning assigned thereto in Section 2.10.1(d)(ii);
<b>“Prevailing Exchange Rate”</b>	The simple average of the rates for buying and selling USD with respect to Thai Baht via telegraphic transfers as publicly reported by the Banking Department of the Bank of Thailand on the last Business Day of the month immediately preceding the month during which the calculation requiring the use and therefore the determination of such exchange rate pursuant to this Agreement is to be made;

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<b>“Primary Energy” or “PE”</b>	For any time period after the Commercial Operation Date, any of: <ul style="list-style-type: none"> <li>(i) in respect of the electrical energy that is Declared to be Available by the Generator, such electrical energy that is Declared to be Available at the Delivery Point during the PE Period;</li> <li>(ii) in respect of the electrical energy that is delivered to the Delivery Point for the EGAT System pursuant to EGAT’s Dispatch, such electrical energy that is determined as Primary Energy in accordance with Schedule 4; or</li> <li>(iii) in respect of other quantities comprising Energy Components, such amount that is determined as Primary Energy in accordance with the relevant provisions of this Agreement;</li> </ul>
<b>“Project”</b>	The development and construction of the entire Generator System;
<b>“Project Agreements”</b>	The Concession Agreement, the EPC Contracts, the O&M Contract (if any), or any other material agreement relating to the Project entered into by the Generator (excluding this Agreement and the Financing Documents);
<b>“Proposed Commissioning Procedures”</b>	The term shall have the meaning assigned thereto in Section 2.10.2(b)(i);
<b>“Proposed Post COD Testing Procedures”</b>	The term shall have the meaning assigned thereto in Section 2.11.1(b)(i);
<b>“Proposed Seven-Year Rolling Program”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1.2 of Part I of Schedule 3;
<b>“Protective System”</b>	The term shall have the meaning assigned thereto in Section 2.9.1;
<b>“Provisional Exceptional Outage”</b>	The term shall have the meaning assigned thereto in Paragraph 1.7.1 of Part I of Schedule 3;

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**“Prudent Utility Practice”**

In relation to the Generator or EGAT or any other Person and at any particular time, the standards of practice attained by exercising that degree of skill, diligence, prudence, judgment and foresight which could reasonably be expected from a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances and location (including climatic and geologic conditions) and in light of the facts known or which reasonably should have been known at the time a decision was made to achieve a desired result:

- (a) in the case of EGAT, applying those practices, designs, methods, means, techniques, equipment and acts that are generally followed by international public electricity industries and commonly used in engineering and operations for electricity generation and transmission facilities of a type similar to the EGAT System; and
- (b) in the case of the Generator, applying those practices, designs, methods, means, techniques, equipment and acts that are generally followed by the international independent electric power producers commonly used in engineering and operations for electricity generation and transmission facilities of a type similar to the Generator System;

**“Reactive Power Capability”**

The term shall have the meaning assigned thereto in Paragraph 2 of Part III of Schedule 1;

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**“Reference Banks”**

For the purpose of establishing the Minimum Overdraft Rate, the principal offices of Bangkok Bank Public Company Limited, KASIKORNBANK Public Company Limited, Krung Thai Bank Public Company Limited, and The Siam Commercial Bank Public Company Limited; or for the purpose of establishing LIBOR, the principal London offices of Deutsche Bank AG, Barclays Bank Plc, Hongkong and Shanghai Banking Group Plc, and Citibank NA or the principal London offices of such other banks as may from time to time be agreed between the Generator and EGAT;

**“Reference Exchange Rate”**

For the purpose of converting US Dollars into Thai Baht or vice versa for the specified accounting provided in this Agreement, the exchange rate of 1 US Dollar to 34 Thai Baht;

**“Regional Control Center” or “RCC”**

The regional control center for the Northeastern Region of Thailand, which is located, as at the Execution Date, at the Khon Khen Province of Thailand, or at such other location as may be designated in writing from time to time by EGAT to the Generator, and which from time to time may at the request and on behalf of the National Control Center, schedules and dispatches generating and transmission facilities in the Northeastern Region of Thailand and the Generator System;

**“Registered Capacity”**

The term shall have the meaning assigned thereto in Paragraph 1.2 of Part I of Schedule 1;

**“Registered Capacity Test”**

The test to establish Registered Capacity conducted in accordance with Section 2.10.4(g)(ii) and Paragraph 4 of Part IV of Schedule 17;

**“Registered Operating Characteristics”**

The term shall have the meaning assigned thereto in Part III of Schedule 1;

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<b>“Registered Stability Limit”</b>	The term shall have the meaning assigned thereto in Paragraph 1.3 of Part II of Schedule 1;
<b>“Registered Unit Deloading Rate”</b>	The term shall have the meaning assigned thereto in Paragraph 3.3 of Part III of Schedule 1;
<b>“Registered Unit Loading Rate”</b>	The term shall have the meaning assigned thereto in Paragraph 3.3 of Part III of Schedule 1;
<b>“Registered Unit Primary Response”</b>	The term shall have the meaning assigned thereto in Paragraph 4(c) of Part III of Schedule 1;
<b>“Registered Unit Reactive Power”</b>	The term shall have the meaning assigned thereto in Paragraph 2 of Part III of Schedule 1;
<b>“Registered Unit Maximum Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 1.4 of Part III of Schedule 1;
<b>“Registered Unit Minimum Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 1.4 of Part III of Schedule 1;
<b>“Registered XYB Unit Minimum Capacity Test”</b>	The term shall have the meaning assigned thereto in Paragraph 7 of Part IV of Schedule 17;
<b>“Registered XYB Unit N Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 3.1 of Part IV of Schedule 17;
<b>“Registered XYB Unit N Capacity Test”</b>	The test to establish Registered XYB Unit N Capacity conducted in accordance with Paragraph 3 of Part IV of Schedule 17;
<b>“Registered XYB Unit N Maximum Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 3.2 of Part IV of Schedule 17;

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## Definitions, Interpretation and Conditions Precedent

## Section 1

<b>“Relevant FMOA Clearing Period 1”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(b)(ii);
<b>“Relevant FMOA Clearing Period 2”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(b)(ii);
<b>“Relevant FMOA Clearing Period 3”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(b)(ii);
<b>“Relevant FMOA Clearing Period 4”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(b)(ii);
<b>“Relevant FMOA Clearing Period 5”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(b)(ii);
<b>“Relevant FMOA Clearing Period 6”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(b)(iii);
<b>“Relevant Period 1”</b>	<p>The period commencing from (and including) the Commercial Operation Date and:</p> <ul style="list-style-type: none"> <li>(i) for the case where the Commercial Operation Date occurs on 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the fifth Contract Year; or</li> <li>(ii) for the case where the Commercial Operation Date occurs on a date other than 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the sixth Contract Year ;</li> </ul>
<b>“Relevant Period 2”</b>	<p>The period commencing from (but excluding) the last day of the Relevant Period 1 and:</p> <ul style="list-style-type: none"> <li>(i) for the case where the Commercial Operation Date occurs on 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the tenth Contract Year; or</li> <li>(ii) for the case where the Commercial Operation Date occurs on a date other than 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the eleventh Contract Year;</li> </ul>

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**“Relevant Period 3”**

The period commencing from (but excluding) the last day of the Relevant Period 2 and:

- (i) for the case where the Commercial Operation Date occurs on 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the fifteenth Contract Year; or
- (ii) for the case where the Commercial Operation Date occurs on a date other than 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the sixteenth Contract Year;

**“Relevant Period 4”**

The period commencing from (but excluding) the last day of the Relevant Period 3 and:

- (i) for the case where the Commercial Operation Date occurs on 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the twentieth Contract Year; or
- (ii) for the case where the Commercial Operation Date occurs on a date other than 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the twenty-first Contract Year;

**“Relevant Period 5”**

The period commencing from (but excluding) the last day of the Relevant Period 4 and:

- (i) for the case where the Commercial Operation Date occurs on 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the twenty-fifth Contract Year; or
- (ii) for the case where the Commercial Operation Date occurs on a date other than 1<sup>st</sup> January, ending on (and including) 31<sup>st</sup> December of the twenty-sixth Contract Year;

**“Relevant Period 6”**

The period commencing (but excluding) the last day of the Relevant Period 5 and ending on (and including) the Term Termination Date;

**“Relevant Portion”**

The term shall have the meaning assigned thereto in Section 2.8.3(a)(i);

**“Restoration Period”**

The term shall have the meaning assigned thereto in Section 10.2.1(j);

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**“Retained Obligations”**

- (a) All of the liabilities and obligations of the Generator which arise in respect of any Claims which are known or which should reasonably have been known as between the Generator and the claimant as at the date on which EGAT acquires the Generator Assets through the EGAT Designated Assignee in accordance with Section 17.12.2(a), but shall exclude all Claims for Generator Outstanding Payments (GOP), as such terms are defined in Annex A to the GOL Undertaking; and
- (b) any and all liability for liquidated damages due and owing to EGAT pursuant to Section 9 that have accrued and remain unsatisfied as at the date on which EGAT acquires the Generator Assets through the EGAT Designated Assignee in accordance with Section 17.12.2(a);

**“Retained Rights”**

All of the rights, title and interest of the Generator which arise in respect of any Claims of the Generator against any counterparty to the Generator Assets which are known or which should reasonably have been known as between the Generator and such counterparty as at the date on which EGAT acquires the Generator Assets through the EGAT Designated Assignee in accordance with Section 17.12.2(a), but shall exclude all Claims for Counterparty Outstanding Payments (COP), as such terms are defined in Annex A to the GOL Undertaking;

**“Revised Commissioning Procedures”**

The term shall have the meaning assigned thereto in Section 2.10.2(b)(iii);

**“Revised Weekly Commissioning Program”**

The term shall have the meaning assigned thereto in Section 2.10.3(b)(iii)(II)(2);

**“SCADA and Communication System”**

The term shall have the meaning assigned thereto in Section 2.8.1;

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<b>“Scheduled Commercial Operation Date” or “SCOD”</b>	The date specified in Section 8.2;
<b>“Scheduled Common Interconnection Facilities Ready Date” or “SCIRD”</b>	The date specified in Section 8.2;
<b>“Scheduled Connection Date” or “SCD”</b>	The date specified in Section 8.2;
<b>“Scheduled EGAT Connection Ready Date” or “SECRD”</b>	The date specified in Section 8.2;
<b>“Scheduled EGAT Interconnection Facilities Ready Date” or “SEIRD”</b>	The date specified in Section 8.2;
<b>“Scheduled Energization Date” or “SED”</b>	The date specified in Section 8.2;
<b>“Scheduled Financial Close Date” or “SFCD”</b>	The date specified in Section 8.2;
<b>“Scheduled First Payment Date” or “SFPD”</b>	The date specified in Section 8.2;
<b>“Scheduled First Unit Commissioning Ready Date” or “SCRD<sub>1</sub>”</b>	The date specified in Section 8.2;
<b>“Scheduled Fourth Unit Commissioning Ready Date” or “SCRD<sub>4</sub>”</b>	The date specified in Section 8.2;
<b>“Scheduled Fifth Unit Commissioning Ready Date” or “SCRD<sub>5</sub>”</b>	The date specified in Section 8.2;
<b>“Scheduled Generator Connection Ready Date” or “SGCRD”</b>	The date specified in Section 8.2;
<b>“Scheduled Generator Interconnection Facilities Ready Date” or “SGIRD”</b>	The date specified in Section 8.2;

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<b>“Scheduled Outage Finish Time”</b>	In respect of a Generator Planned Outage or a Generator Maintenance Outage, the term shall have the meaning assigned thereto in Sections 3.6.1(b) and 3.6.2(b);
<b>“Scheduled Outage Start Time”</b>	In respect of a Generator Planned Outage or a Generator Maintenance Outage, the term shall have the meaning assigned thereto in Sections 3.6.1(b) and 3.6.2(b);
<b>“Scheduled Second Unit Commissioning Ready Date” or “SCRD<sub>2</sub>”</b>	The date specified in Section 8.2;
<b>“Scheduled Seventh Unit Commissioning Ready Date” or “SCRD<sub>7</sub>”</b>	The date specified in Section 8.2;
<b>“Scheduled Sixth Unit Commissioning Ready Date” or “SCRD<sub>6</sub>”</b>	The date specified in Section 8.2;
<b>“Scheduled Third Unit Commissioning Ready Date” or “SCRD<sub>3</sub>”</b>	The date specified in Section 8.2;
<b>“Scheduled Termination Date”</b>	The date that is immediately preceding the 27th anniversary of the Commercial Operation Date, as extended in accordance with Sections 8.1.2(f) and 8.1.3, as applicable;

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**“Scheduled Termination Payment Date”**

The date on which the Party liable for the Termination Payment is scheduled to make such payment to the other Party, such date being:

- (i) in the case of termination of this Agreement after the Financial Close Date due to a Generator Event of Default or a Lao Political Force Majeure pursuant to Sections 10.2.2, 11.11(c) or 11.11(d)(i), the date that is ninety (90) days after the date on which EGAT has given written notification of its election to exercise its rights to either acquire the Generator Assets or to obtain the Termination Payment from the Generator pursuant to Sections 10.2.3 or 11.8.5; or
- (ii) in the case of termination of this Agreement after the Financial Close Date due to an EGAT Event of Default, failure of EGAT to acquire the EGAT Access Rights due to an EGAT Force Majeure referred to in Section 2.1.7(c) or a Thai Political Force Majeure pursuant to Sections 10.1.2, 11.11(b), 11.11(c) or 11.11(d)(i), the date that is one hundred and eighty (180) days after the Term Termination Date,

in each case, as such date may have been extended pursuant to paragraph 3 of Part III of Schedule 9;

**“SE Availability”**

For any time period after the Commercial Operation Date, the Availability of Secondary Energy (expressed in MWh);

**“SE Based LD Rate”**

In respect of liquidated damages due under Sections 9.5 and 9.6 for any month in a Contract Year, twenty-three point seven percent (23.7%) of the SE Tariff for that month in Thai Baht per kWh;

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<b>“SE Period”</b>	For the period starting from (and including) the One Unit Operation Ready Date, the portion of time comprised in any of the following duration or the combination thereof:  (i) from 0 a.m. to 6 a.m. of any Weekday; (ii) from 10 p.m. to 12 p.m. of any Weekday; and (iii) the entire 24-hour period comprised in any Sunday;
<b>“SE Tariff”</b>	In respect of a given Contract Year, the tariff rate applicable to the Secondary Energy as set out in the column titled “Secondary Energy” for such given Contract Year in the Tariff Table as provided in Schedule 2;
<b>“Second Generating Unit”</b>	The Generating Unit for which the Acceptance Date of the Certificate of Readiness for Energization therefor occurs on the CRD <sub>2</sub> ;
<b>“Second Security”</b>	The term shall have the meaning assigned thereto in Section 9.1(b)(ii)(1);
<b>“Second Unit Commissioning Ready Date” or “CRD<sub>2</sub>”</b>	The Acceptance Date of the second in time Certificate of Readiness for Energization that has been issued for any Generating Unit;

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<b>“Secondary Energy” or “SE”</b>	For any time period after the Commercial Operation Date, any of: <ul style="list-style-type: none"> <li>(i) in respect of the electrical energy that is Declared to be Available by the Generator, such electrical energy that is Declared to be Available at the Delivery Point during any SE Period;</li> <li>(ii) in respect of the electrical energy that is delivered to the Delivery Point for the EGAT System pursuant to EGAT’s Dispatch, such electrical energy that is determined as Secondary Energy in accordance with Schedule 4; or</li> <li>(iii) in respect of other quantities comprising Energy Components, such amount that is determined as Secondary Energy in accordance with the relevant provisions of this Agreement;</li> </ul>
<b>“Security”</b>	Any combination of the First Security, the Second Security, the Third Security and the Fourth Security, including any one and all of such First Security, Second Security, Third Security and Fourth Security, as the context may require;
<b>“Security Agent”</b>	The agent or trustee (including in each case its successor, transferee and assignee) acting for and on behalf of the Lenders as permitted under the Financing Documents and as notified to EGAT from time to time;
<b>“Settled Energy Limit”</b>	Any or all of Settled Energy Limit One, Settled Energy Limit Two and Settled Energy Limit Three, as the context may require;
<b>“Settled Energy Limit One”</b>	The term shall have the meaning assigned thereto in Section 4.4.1(a);
<b>“Settled Energy Limit Three”</b>	The term shall have the meaning assigned thereto in Section 4.4.1(a);
<b>“Settled Energy Limit Two”</b>	The term shall have the meaning assigned thereto in Section 4.4.1(a);

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<b>“Settlement Confirmation Statements”</b>	Any or all of the Generator Weekly Confirmation Statements and the EGAT Monthly Confirmation Statements, as the context may require;
<b>“Settlement Period”</b>	A period of one (1) hour starting on the hour;
<b>“Settlement Period Generation Shortfall”</b>	In respect of any Settlement Period and for the purpose of Section 9.6, the maximum value of all the differences (in kWh) at any point of time during such Settlement Period between: <ul style="list-style-type: none"> <li>(a) the generating capacity (referred to as the Delivery Point) that is actually achievable from the Facility, or that is deemed to be achievable from the Facility upon EGAT’s Dispatch; and</li> <li>(b) the relevant Registered Capacity for seven (7) Generating Units and the given Operating Water Head, as provided in Table 1.3.1 of Part III of Schedule 1;</li> </ul>
<b>“Seven Units Operation Ready Date”</b>	The last in time Acceptance Date of the seven (7) Certificates of Readiness for Operation that have been issued for each of the seven (7) Generating Units;
<b>“Seventh Generating Unit”</b>	The Generating Unit for which the Acceptance Date of the Certificate of Readiness for Energization therefor occurs on the CRD <sub>7</sub> ;
<b>“Seventh Unit Commissioning Ready Date” or “CRD<sub>7</sub>”</b>	The Acceptance Date of the seventh in time Certificate of Readiness for Energization that has been issued for any Generating Unit;
<b>“Seven-Year Rolling Program”</b>	The program for the Generator Planned Outage for the relevant seven (7) year period finalized pursuant to Paragraph 1.1.2(a) of Part I of Schedule 3;
<b>“Shareholders”</b>	The shareholders of the Generator at the time of executing this Agreement, which comprise [.....];

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<b>“Short Notice Outage PE Unavailability”</b>	The term shall have the meaning assigned thereto in Section 9.6.3(c)(i);
<b>“Short Notice Outage SE Unavailability”</b>	The term shall have the meaning assigned thereto in Section 9.6.3(c)(ii);
<b>“Site”</b>	The land and other places upon which the Project features, equipment and components as described in Schedule 11 are to be built and installed, or are built and installed;
<b>“Sixth Generating Unit”</b>	The Generating Unit for which the Acceptance Date of the Certificate of Readiness for Energization therefor occurs on the CRD <sub>6</sub> ;
<b>“Sixth Unit Commissioning Ready Date” or “CRD<sub>6</sub>”</b>	The Acceptance Date of the sixth in time Certificate of Readiness for Energization that has been issued for any Generating Unit;
<b>“Specified Accuracy”</b>	The term shall have the meaning assigned thereto in Section 2.7.3(b);
<b>“Start and Stop Cycle”</b>	The term shall have the meaning assigned thereto in Paragraph 1.2 of Part IV of Schedule 17;
<b>“Start and Stop Test”</b>	The term shall have the meaning described in Paragraph 1.2 of Part IV of Schedule 17;
<b>“Start and Stop Test Period”</b>	The term shall have the meaning assigned thereto in Paragraph 1.2 of Part IV of Schedule 17;
<b>“Subordination Agreement”</b>	The term shall have the meaning assigned thereto in Section 9.4.4;
<b>“Subsystem”</b>	Either an EGAT Subsystem or a Generator Subsystem;
<b>“Supply Excess PE Account”</b>	The term shall have the meaning assigned thereto in Paragraph 6(a) of Schedule 4;
<b>“Supply Excess PE Payment Account”</b>	The term shall have the meaning assigned thereto in Paragraph 6(b) of Schedule 4;

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<b>“Supply Excess PE Tariff”</b>	The term shall have the meaning assigned thereto in Paragraph 6(b) of Schedule 4;
<b>“Supply Excess SE Account”</b>	The term shall have the meaning assigned thereto in Paragraph 6(a) of Schedule 4;
<b>“Supply Excess SE Payment Account”</b>	The term shall have the meaning assigned thereto in Paragraph 6(b) of Schedule 4;
<b>“Supply Excess SE Tariff”</b>	The term shall have the meaning assigned thereto in Paragraph 6(b) of Schedule 4;
<b>“System Emergency”</b>	A situation when the integrity, safety or reliability of all or parts of the EGAT System is threatened;
<b>“Tailwater Level Limitation”</b>	The limitation of the capability of the Facility to provide electrical energy associated with excessively high level of tailwater, which limitation shall be monitored by the Generator and notified by the Generator to EGAT;
<b>“Tailwater Level Outage”</b>	The term shall have the meaning assigned thereto in Section 3.6(2) and described in Section 3.6.8;
<b>“Tailwater Level Unavailability” or “TL”</b>	The term shall have the meaning assigned thereto in Section 3.7.2(A)(e);
<b>“Tariff Table”</b>	The table provided in Paragraph 3 of Schedule 2;

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- “Taxes”** Any tax, charge, toll, tariff, imposition, levy, duty or fee of any kind charged, imposed, or levied, directly or indirectly, by any Governmental Authority, including (without limitation) any value-added tax, sales tax, stamp duty (whether ad valorem or otherwise), import or export duty, withholding tax (whether on income, dividends, interest payments, fees, equipment rentals or otherwise), tax on foreign currency loans or foreign exchange transactions, excise tax, property tax, registration or license fee, water tax or environmental, energy or other resource tax and together with interest thereon and penalties and fines with respect thereto, if any, and any payments due or made on or in respect thereof;
- “Term”** The period defined in Section 8.1.1;
- “Term End Factor”** The term shall have the meaning assigned thereto in Sections 9.6.1(a), 9.6.7(b) and Part I of Schedule 9, as applicable;
- “Term Termination Date”** The date on which this Agreement is terminated in accordance with the provisions of this Agreement (either upon the Scheduled Termination Date or such earlier date pursuant to Sections 10.1.2, 10.2.2 or 11.11);
- “Termination Payment”** The payment that one Party pays to the other Party pursuant to termination of this Agreement in accordance with Sections 10 and 11, as calculated in accordance with Schedule 9;
- “Test Energy”** The electrical energy generated by any Generating Unit and delivered to the Delivery Point for the EGAT System during any Commissioning Testing, Annual Testing or Additional Testing in accordance with Sections 2.10 and 2.11, calculated in accordance with Paragraph 2 of Part II of Schedule 7;
- “Test Energy Tariff”** The tariff rate applicable to Test Energy as set out in Paragraph 2.1 of Schedule 2;

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<b>“Tested Accuracy”</b>	The accuracy for the respective Metering Equipment resulting from the Commissioning Testing, the Annual Testing or the Additional Testing, as the context may require;
<b>“Tested Maximum Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 4.2 of Part IV of Schedule 17;
<b>“Tested XYB Unit Maximum Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 4.4.2(a)(B)(1) of Part IV of Schedule 17;
<b>“Tested XYB Unit Minimum Capacity”</b>	The term shall have the meaning assigned thereto in Paragraph 7.3 of Part IV of Schedule 17;
<b>“Thai Arbitration Act”</b>	The Thai law that governs arbitration in Thailand;
<b>“Thai Bank”</b>	A bank that is either: (a) incorporated in Thailand and which is licensed by the Bank of Thailand to conduct business in Thailand; or (b) incorporated outside Thailand and which is licensed by the Bank of Thailand to conduct business in Thailand;

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**“Thai Change-in-Law”**

The occurrence of any of the following after the Execution Date:

- (a) the enactment of any new Law of Thailand;
- (b) the modification or repeal of any Law of Thailand;
- (c) the application to either Party and/or their respective facilities and equipment relevant to performance of their respective obligations hereunder of any Law of Thailand which had been enacted but that had not become effective prior to the execution of this Agreement; and
- (d) a change in the interpretation or application of Law of Thailand by a Thai Governmental Authority;

provided, however, that the first interpretation or the first application after the Execution Date by a Thai Governmental Authority of a Law of Thailand that was in force on the Execution Date but has never been interpreted or applied on any date prior to the Execution Date shall not constitute a Thai Change-in-Law;

**“Thai Governmental Authority”**

The government, any governmental department, ministry, commission, board, bureau, agency, regulatory authority, instrumentality, judicial, legislative or administrative body of Thailand or any subdivision of any of the foregoing (but excluding EGAT);

**“Thai Political Force Majeure”**

The term shall have the meaning assigned thereto in Section 11.1(c);

**“Thailand High Voltage Large General Service Category”**

The category of tariff rate applicable to business, industrial and state enterprise customers of EGAT with a consumption of 2,000 kW and above and supply voltage of 69 kV and above, as such tariff rate is published by EGAT from time to time and as from time to time amended, modified or supplemented;

**“Thailand”**

The Kingdom of Thailand;

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<b>“Third Generating Unit”</b>	The Generating Unit for which the Acceptance Date of the Certificate of Readiness for Energization therefor occurs on the CRD <sub>3</sub> ;
<b>“Third Security”</b>	The term shall have the meaning assigned thereto in Section 9.1(b)(ii)(2);
<b>“Third Unit Commissioning Ready Date” or “CRD<sub>3</sub>”</b>	The Acceptance Date of the third in time Certificate of Readiness for Energization that has been issued for any Generating Unit;
<b>“Threshold Operating Characteristics”</b>	Any or all of the Threshold Registered Capacity, the Threshold XYB Unit Minimum Capacity, the Threshold Unit Reactive Power, the Threshold Unit Loading Rate, the Threshold Unit Deloading Rate and the Threshold Unit Primary Response, as the context may require;
<b>“Threshold Registered Capacity”</b>	The term shall have the meaning assigned thereto in Section 9.6.1;
<b>“Threshold Unit Deloading Rate”</b>	The term shall have the meaning assigned thereto in Section 9.6.7(d);
<b>“Threshold Unit Loading Rate”</b>	The term shall have the meaning assigned thereto in Section 9.6.7(c);
<b>“Threshold Unit Primary Response”</b>	The term shall have the meaning assigned thereto in Section 9.6.7(e);
<b>“Threshold Unit Reactive Power ”</b>	The term shall have the meaning assigned thereto in Section 9.6.7(b);
<b>“Threshold XYB Unit Minimum Capacity”</b>	The term shall have the meaning assigned thereto in Section 9.6.7(a);
<b>“Total Gross Electrical Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 1(C)(a) of Part II of Schedule 7;
<b>“Total 29-Year Related FM Extended Period”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(e);

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<b>“Total 29-Year Related FM Extension”</b>	The term shall have the meaning assigned thereto in Section 8.1.2(c);
<b>“Transmission Line”</b>	The double circuit 500 kV transmission line between the Xayaburi Switchyard and the Loei 2 Substation;
<b>“Transmission Line Maintenance”</b>	The maintenance of the Transmission Line as described in Paragraph 1.3 of Part I of Schedule 20 and Paragraph 2 of Part II of Schedule 20;
<b>“Transmission Line Stability Limit”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1 of Part II of Schedule 1;
<b>“Transmission Loss”</b>	For any period, the amount of transmission losses which occurs in the Transmission Line between the Loei 2 Metering Point and the Xayaburi Metering Point, determined on the basis of the relevant Meter Readings;
<b>“Type Test”</b>	The term shall have the meaning assigned thereto in Paragraph 6 of Part I of Schedule 17;
<b>“Maintenance Plan”</b>	The term shall have the meaning assigned thereto in Part I of Schedule 20;
<b>“Unavailability”</b>	A failure of the Generator System to provide Availability regardless of the reason therefor, and <b>“Unavailable”</b> shall be construed accordingly;
<b>“Unavailability Period”</b>	The term shall have the meaning assigned thereto in Paragraph 3.2.2 of Part I of Schedule 3;
<b>“Undeclared Force Majeure Unavailability”</b>	The term shall have the meaning assigned thereto in Section 3.7.2(A)(c);
<b>“Undeclared Unavailability”</b>	The term shall have the meaning assigned thereto in Section 3.7.2(A)(b);

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<b>“Undeclared Unavailability Period” or “UD Period”</b>	An Unavailability Period that is associated with Undeclared Unavailability;
<b>“Unit Active Power”</b>	The term shall have the meaning assigned thereto in Paragraph 1 of Part III of Schedule 1;
<b>“Unit Deloading Rate”</b>	The term shall have the meaning assigned thereto in Paragraph 3 of Part III of Schedule 1;
<b>“Unit Dispatch Level”</b>	The term shall have the meaning assigned thereto in Section 3.8.1(c);
<b>“Unit Energy”</b>	The electrical energy (expressed in MWh) generated by any Generating Unit measured by the relevant Unit Energy Meter at the corresponding Unit Metering Point;
<b>“Unit Energy Meter”</b>	The term shall have the meaning assigned thereto in Paragraph 1 of Part II of Schedule 14;
<b>“Unit Excess Energy”</b>	The term shall have the meaning assigned thereto in Section 4.2.2(a);
<b>“Unit Loading Rate”</b>	The term shall have the meaning assigned thereto in Paragraph 3 of Part III of Schedule 1;
<b>“Unit Loading/Deloading Rate”</b>	Either or both of the Unit Loading Rate and the Unit Deloading Rate, as the context may require;
<b>“Unit Metering Point”</b>	The respective location of the energy meters comprised in the Unit Metering System situated at the stator terminal of the respective Generating Unit;
<b>“Unit Metering System”</b>	The term shall have the meaning assigned thereto in Paragraph 1.1 of Part II of Schedule 14;

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<b>“Unit Operating Range”</b>	The term shall have the meaning assigned thereto in Paragraph 1.4 of Part III of Schedule 1;
<b>“Unit Operation Energy”</b>	The term shall have the meaning assigned thereto in Section 4.2.2(a);
<b>“Unit Operation Energy Tariff”</b>	The tariff rate applicable to Unit Operation Energy as set out in Paragraph 2.2 of Schedule 2
<b>“Unit Operation Period”</b>	The period which starts from (and includes) the One Unit Operation Ready Date and ends on (but excludes) the Commercial Operation Date;
<b>“Unit Primary Energy”</b>	The term shall have the meaning assigned thereto in Section 4.2.2(a);
<b>“Unit Primary Response”</b>	The term shall have the meaning assigned thereto in Paragraph 4 of Part III of Schedule 1;
<b>“Unit Reactive Power”</b>	The term shall have the meaning assigned thereto in Paragraph 2 of Part III of Schedule 1;
<b>“Unit Secondary Energy”</b>	The term shall have the meaning assigned thereto in Section 4.2.2(a);
<b>“Unit Trial Run Test”</b>	The term shall have the meaning assigned thereto in Paragraph 1 of Part IV of Schedule 17;
<b>“Unpaid EGAT FMOA”</b>	All unpaid Force Majeure Offset Amounts arising from an EGAT Event of Default which has occurred and is continuing in relation to EGAT’s failure to make payment of any undisputed amount in respect of any Force Majeure Offset Amounts due and payable to the Generator under this Agreement;

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<b>“Unpaid Generator FMOA”</b>	All unpaid Force Majeure Offset Amounts arising from a Generator Event of Default which has occurred and is continuing in relation to Generator’s failure to make payment of any undisputed amount in respect of any Force Majeure Offset Amounts due and payable to EGAT under this Agreement;
<b>“Unplanned Machine Outage”</b>	The term shall have the meaning assigned thereto in Section 3.6(ii);
<b>“US\$” or “US Dollar” or “USD” or “US Cent”</b>	The lawful currency of the United States of America;
<b>“Water Measuring System”</b>	The term shall have the meaning assigned thereto in Part III of Schedule 14;
<b>“Water Supply Limitation”</b>	The limitation of the capability of the Facility to provide electrical energy associated with the supply of water that may be used to generate electricity for delivery to the Delivery Point for the EGAT System, which shall be monitored by the Generator;
<b>“Water Supply Outage”</b>	The term shall have the meaning assigned thereto in Section 3.6(2) and described in Section 3.6.7;
<b>“Water Supply Unavailability” or “WS”</b>	The term shall have the meaning assigned thereto in Section 3.7.2(A)(d);
<b>“Week Ahead Unavailability”</b>	The term shall have the meaning assigned thereto in Section 3.7.2(A)(a)(i);
<b>“Weekday”</b>	Any day from Monday to Saturday (inclusive) in any week during the Term;
<b>“Weekly Additional Energy”</b>	The term shall have the meaning assigned thereto in Section 4.3(d);
<b>“Weekly Additional Excess Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 5(d) of Schedule 4;

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<b>“Weekly Additional Primary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 5(d) of Schedule 4;
<b>“Weekly Additional Secondary Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 5(d) of Schedule 4;
<b>“Weekly Declaration”</b>	The term shall have the meaning assigned thereto in Paragraph 1.3 of Part I of Schedule 3;
<b>“Weekly Declared Capacity”</b>	The value of generating capacity Declared by the Generator in accordance with Paragraph 1.3.1(a) of Part I of Schedule 3, which shall be available for all Settlement Periods comprised in the relevant week except for any Machine Outage;
<b>“Weekly Declared Additional EC Percentage”</b>	The term shall have the meaning assigned thereto in Paragraph 5B of Part II of Schedule 3;
<b>“Weekly Declared Additional EE Percentage”</b>	The term shall have the meaning assigned thereto in Paragraph 5B of Part II of Schedule 3;
<b>“Weekly Declared Additional PE Percentage”</b>	The term shall have the meaning assigned thereto in Paragraph 5B of Part II of Schedule 3;
<b>“Weekly Declared Additional SE Percentage”</b>	The term shall have the meaning assigned thereto in Paragraph 5B of Part II of Schedule 3;
<b>“Weekly Declared EC Percentage”</b>	The term shall have the meaning assigned thereto in Paragraph 5A of Part II of Schedule 3;
<b>“Weekly Declared EE Percentage”</b>	The term shall have the meaning assigned thereto in Paragraph 5A of Part II of Schedule 3;
<b>“Weekly Declared PE Percentage”</b>	The term shall have the meaning assigned thereto in Paragraph 5A of Part II of Schedule 3;

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<b>“Weekly Declared SE Percentage”</b>	The term shall have the meaning assigned thereto in Paragraph 5A of Part II of Schedule 3;
<b>“Weekly Derived EE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 2.3.5 of Part II of Schedule 3;
<b>“Weekly Derived PE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 2.3.3 of Part II of Schedule 3;
<b>“Weekly Derived SE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 2.3.4 of Part II of Schedule 3;
<b>“Weekly Dispatch Shortfall Energy”</b>	The term shall have the meaning assigned thereto in Section 4.3(b);
<b>“Weekly Dispatch Shortfall Payment”</b>	The term shall have the meaning assigned thereto in Paragraph 3(c) of Schedule 4;
<b>“Weekly EE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 1.3.1(d) of Part I of Schedule 3;
<b>“Weekly First Make-Up Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 4(a) of Schedule 4;
<b>“Weekly Force Majeure Dispatch Shortfall Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 2 of Schedule 10;
<b>“Weekly Force Majeure Unavailability”</b>	The term shall have the meaning assigned thereto in Paragraph 1 of Schedule 10;
<b>“Weekly Maximum Primary Energy Declaration”</b>	The term shall have the meaning assigned thereto in Section 3.5.2(a);
<b>“Weekly Maximum Secondary Energy Declaration”</b>	The term shall have the meaning assigned thereto in Section 3.5.2(b);
<b>“Weekly PE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 1.3.1(b) of Part I of Schedule 3;

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<b>“Weekly Pre Make-Up Additional Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 3(a) of Schedule 4;
<b>“Weekly Pre Make-Up Excess Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 3(a) of Schedule 4;
<b>“Weekly SE Availability”</b>	The term shall have the meaning assigned thereto in Paragraph 1.3.1(c) of Part I of Schedule 3;
<b>“Weekly Second Make-Up Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 5(a) of Schedule 4;
<b>“Weekly Set Off Energy”</b>	The term shall have the meaning assigned thereto in Paragraph 8(a) of Schedule 4;
<b>“Weekly Supply”</b>	The term shall have the meaning assigned thereto in Section 4.4.3(a).
<b>“Weekly Unavailability”</b>	The term shall have the meaning assigned thereto in Paragraph 3.3 of Part I of Schedule 3;
<b>“Xayaburi Metering Point”</b>	The location of the energy meters comprised in the Xayaburi Metering System situated at the Xayaburi Switchyard in the Lao PDR;
<b>“ Xayaburi Metering System”</b>	The term shall have the meaning assigned thereto in Part II of Schedule 14;
<b>“Xayaburi Switchyard”</b>	The switchyard located near the Xayaburi power station, at which the switching operations in respect of the Xayaburi power station are performed;
<b>“XYB Facility Minimum Capacity Excess”</b>	The term shall have the meaning assigned thereto in Sections 9.5.8(a) or 9.6.7(a), as applicable;

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## 1.2 Interpretation

In this Agreement, unless otherwise stated:

### 1.2.1 Any references to:

- (a) a Law or any other enactment or any section of, or schedule to, or other provision of any such enactment shall be construed, at any particular time, as including a reference to any modification, extension or re-enactment thereof then in force and to all instruments, orders or regulations then in force and made under or deriving validity from the relevant enactment or provision (as the same may have been so modified, extended or re-enacted from time to time) provided that nothing in this paragraph (a) shall in any way prejudice the operation of any provision in this Agreement relating to a Change-in-Law;
- (b) the Grid Code, or any section, appendix or other provision thereof, shall be construed, at any particular time, as including a reference to the Grid Code, section, appendix or the relevant provision thereof provided, however, that all references regarding compliance to or inconsistency with the Grid Code in this Agreement other than the references set forth in Schedule 21 shall be read, interpreted and construed as if the Grid Code includes such exemptions and amendments as identified in Parts II and III of Schedule 21;
- (c) any agreement (including this Agreement or any Schedule hereto) shall be construed, at any particular time, as including a reference to the relevant agreement as it may have been amended, modified, supplemented, novated or added (as side agreement) from time to time, and to all annexes, schedules, attachments, supplements and the like which form a part of such agreement;
- (d) a particular Subsection, Section, Schedule or Appendix shall be a reference to the relevant Subsection, Section, Schedule or Appendix in or to this Agreement; and
- (e) a particular Paragraph, if contained in a Schedule, shall be a reference to the relevant Paragraph of that Schedule.

- 1.2.2 Words in the singular may be interpreted as referring to the plural and vice versa, and words denoting natural persons may be interpreted as referring to any person and references to a “**Person**” shall be construed as to include any individual, juristic person, firm, company, corporation, partnership, joint venture, association, trust, unincorporated organization, government, state, Governmental Authority or other agency of a government or state (whether or not having separate legal personality).

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- 1.2.3 References to either Party or any other Persons shall include its legal successors and permitted assignees.
- 1.2.4 Reference in this Agreement to:
- (a) a day, unless a Business Day is specified, shall mean a twenty-four (24) hour period beginning at 0:00 local time at the National Control Center;
  - (b) a week shall mean a seven (7) day period running from Monday through Sunday, provided for the purpose of performing the calculations in respect of the first week after the COD and the last week of the Term, the number of days that comprised within either of these two weeks that also fall within the period from COD until the end of the term, and also any amount in connection with such number of days, shall be used as the basis of calculation;
  - (c) a month shall mean a calendar month unless a Full Calendar Month is specified;
  - (d) a year shall mean a calendar year unless otherwise specified; and
  - (e) a number of days shall refer to the number of calendar days unless Business Days is specified.
- 1.2.5 Unless the context otherwise requires, the words "include" and "including" are to be construed as being at all times followed by the words "without limitation".

### 1.3 Calculation Values

For the purpose of this Agreement, amounts and values shall, unless otherwise specified, be calculated and rounded up to the number of decimal places as indicated in accordance with Part I of Schedule 7.

### 1.4 Table of Contents and Headings

The table of contents and headings are inserted for convenience only and are not to be applied for purposes of construction and interpretation of this Agreement.

### 1.5 Conditions Precedent

- 1.5.1 The obligations of the Parties under this Agreement (other than pursuant to this Section and Sections 2.2, 2.3, 9.1, 13, 14, 15, 16, 17, 19 and 20, all of which shall take effect on the Execution Date) are subject to and in all respects conditional on the satisfaction of the following conditions (the “**Conditions Precedent**”):

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- (a) the delivery by the Generator to EGAT of a copy of the Concession Agreement executed by the Generator and the GOL that, having been so executed by such parties, sets forth legal, valid and binding rights and obligations on the part of the Generator and the GOL that are enforceable in accordance with the terms thereof, together with a letter from the Generator to EGAT setting forth legally binding representations on the part of the Generator to and for the benefit of EGAT that the Concession Agreement submitted therewith: (A) has been properly executed by and sets forth such rights and obligations on the part of the Generator and the GOL; and (B) is consistent with the Generator's representations and warranties set forth in Section 15.1 and does not include any terms or conditions that would have a material adverse effect on the respective rights and obligations of the Parties under this Agreement. For the avoidance of doubt, in rendering such representations the Generator hereby expressly acknowledges that a prohibition against assignment of the Concession Agreement to EGAT without the prior written approval of the GOL would have a material adverse effect upon the rights and obligations of EGAT to acquire the Generator Assets pursuant to Section 10.1.3, 10.2.3, 11.7.5 and 11.8.5 of this Agreement;
- (b) the delivery by the Generator to EGAT of copies of all consents or approvals of the Generator's board of directors required for the Generator to lawfully execute and deliver this Agreement and to become contractually obligated to perform its obligations hereunder;
- (c) the delivery by EGAT to the Generator of copies of all consents or approvals of EGAT's board of directors required for EGAT to lawfully execute and deliver this Agreement and to become contractually obligated to perform its obligations hereunder;
- (d) the delivery by the Generator to EGAT of an undertaking issued to EGAT by the GOL in the form set out in Schedule 24 or, if not in such form, in form and substance satisfactory to EGAT, as executed and issued by the GOL in accordance with the authorization duly given to the GOL by the National Assembly of the Lao PDR (the "**GOL Undertaking**");
- (e) the execution and delivery by EGAT to the Generator of a copy of EGAT's acceptance of the GOL Undertaking in the form set out in Schedule 1 to the GOL Undertaking or, if not in such form, in form and substance satisfactory to the Generator;
- (f) the delivery by the Generator to EGAT of a legal opinion issued by the Minister of Justice of the Lao PDR confirming

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that:

- (i) the Concession Agreement and the GOL Undertaking have each been duly executed by representatives authorized to execute the same on behalf of the GOL and that the respective obligations of the GOL set forth in the Concession Agreement and the GOL Undertaking are legal, valid, binding and enforceable in accordance with terms and conditions set forth therein;
- (ii) the Concession Agreement and the PPA have each been duly executed by representatives authorized to execute the same on behalf of the Generator and that the respective obligations of the Generator respectively set forth in the Concession Agreement and the PPA are legal, valid, binding and enforceable under the Law of the Lao PDR in accordance with terms and conditions set forth therein; and
- (iii) the Additional Security, the Insurance Assignment and the Subordination Agreement have each been properly executed by the Generator, are each enforceable and, to the extent required by the Law of the Lao PDR, have each been registered with the State Assets Management Department of the Ministry of Finance of the Lao PDR;

such opinion being in the form set out in Part I of Schedule 23 or, if not in such form, in form and substance satisfactory to EGAT;

- (g) the delivery by the Generator to EGAT of evidence of the registration of this Agreement by the Generator with the State Assets Management Department of the Ministry of Finance of the Lao PDR without modification or amendment or with only such modifications or amendments as may be agreed in writing by the Parties; and
- (h) the delivery by the Generator to EGAT of copies of the certificate of incorporation and registration, the Memorandum of Association and the Article of Association of the Generator, (including all amendments or variations thereto) regarding the incorporation, establishment and registration of the Generator, certified by authorized officers of the Generator.

- 1.5.2 (a) In the event that any of the Conditions Precedent for which a Party is responsible has been satisfied on or prior to the applicable deadline, such responsible Party shall notify the other Party of such satisfaction in writing, which notification shall be acknowledged by the recipient Party.

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- (b) In the event that a Party contemplates or believes that it shall be unable to satisfy any of the Conditions Precedent for which it is responsible by the applicable deadline, such responsible Party shall notify the other Party of such inability in writing prior to the applicable deadline as soon as reasonably practicable, and the recipient Party, in its sole discretion, shall inform the responsible Party whether or not it is agreeable to extending the deadline for the satisfaction of such Condition Precedent by the responsible Party.
- 1.5.3 Other than with respect to the Conditions Precedent set forth in Subsections 1.5.1(c) and (e), EGAT may agree in writing to waive any one or more of the Conditions Precedent. The Generator may agree in writing to waive only the Conditions Precedent set forth in Subsections 1.5.1(c) and (e).
- 1.5.4 Subject to any extension of the applicable deadline provided in accordance with Section 1.5.2(b), in the event that:
- (a) one or more of the Conditions Precedent set out in Subsections 1.5.1(a), (b), (d), (f), (g) or (h) fail to be satisfied by the Generator or waived by EGAT not later than: (i) sixty (60) days after the Execution Date in the case of Subsections 1.5.1(a), (b) or (g); (ii) ninety (90) days after the Execution Date in the case of Subsection 1.5.1(f); (iii) thirty (30) days after the Execution Date in the case of Subsections 1.5.1(d); and (iv) fifteen (15) days after the Execution Date in the case of Subsection 1.5.1(h);
- (b) one or more of the Condition Precedent set out in Subsections 1.5.1(c) or (e) fail to be satisfied by EGAT or waived by the Generator within: (i) sixty (60) days after the Execution Date in the case of Subsection 1.5.1(c); and (ii) thirty (30) days after the receipt by EGAT of the executed version of the GOL Undertaking delivered by the Generator to EGAT that satisfies the Condition Precedent set out in Subsections 1.5.1(d) in the case of Subsection 1.5.1(e); or
- (c) the Generator has failed to confirm to EGAT within one hundred and twenty (120) days after the Execution Date that each of the conditions precedent for the effectiveness of the Concession Agreement as provided therein has been either duly satisfied or duly waived in accordance with the terms and conditions of the Concession Agreement;

then this Agreement shall automatically lapse and terminate and, in the event that such termination is solely attributable to the failure of the Generator to have unconditionally satisfied the Conditions Precedent

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set forth in Subsections 1.5.1(a), (b), (d), (f), (g) and (h), regardless of the reasons or cause of such failure on the part of the Generator, and notwithstanding any other provision in this Agreement to the contrary (including Section 9), EGAT shall draw down the full amount of the Development Security One and EGAT shall be entitled to retain the entire drawn amount as compensation for such termination. Termination of this Agreement pursuant to this Section 1.5.4 shall occur without any continuing obligations hereunder by either Party to the other Party or any continuing rights or claims whatsoever by either Party against the other except for: (i) the foregoing right of EGAT to draw down and retain the full amount of the Development Security One as compensation upon such termination solely attributable to the failure of the Generator to satisfy the Conditions Precedent for which the Generator is responsible; and (ii) the obligations (and all claims in respect of any breach thereof) set forth in Sections 13, 16, 17, 19 and 20, which shall remain in full force and effect notwithstanding the termination of this Agreement.

- 1.5.5 Each Party shall bear its own costs and expenses in procuring the delivery and satisfaction of its respective Conditions Precedent the satisfaction of which it is responsible for.

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## 2. OBLIGATIONS TO DEVELOP, TEST AND OPERATE

### 2.1 Obligations to Develop and to Achieve the Commercial Operation Date

#### A. Obligation to achieve the Financial Close Date

2.1.1 The Generator shall achieve the Financial Close Date by satisfying all the conditions set forth in Section 2.1.2. Subject to Section 8.3.2, the Generator shall so achieve the Financial Close Date by the Scheduled Financial Close Date.

2.1.2 The Financial Close Date shall occur upon delivery by the Generator to EGAT, with all costs associated therewith to be borne by the Generator, of:

- (a) a confirmation by the Lenders or the Security Agent that Financial Close has been achieved; and
- (b) the Second Security, the Third Security and the Fourth Security;
- (c) the Additional Security executed by the Generator in respect of the rights of EGAT regarding the Additional Security in accordance with the requirements set forth in Section 9.4;
- (d) the Insurance Assignment executed by the Generator in respect of the rights of EGAT regarding the Insurance Assignment in accordance with the requirements of Section 18.3.4;
- (e) the Subordination Agreement executed by the Generator and the parties thereto in respect of the rights of EGAT regarding the Additional Security and the Insurance Assignment in accordance with the requirements set forth in Sections 9.4 and 18.3.4, respectively;
- (f) a copy of the written consent to the execution and the delivery of the Additional Security, the Insurance Assignment and the Subordination Agreement provided by the GOL pursuant to Paragraph 5(f)(i) of the GOL Undertaking in the form set out in Part IV of Schedule 25 or, if not in such form, in form and substance satisfactory to EGAT; and
- (g) evidences that the Generator has fully satisfied all the Conditions Precedent set out in Sections 1.5.1(a), (b), (d), (f), (g) and (h).

#### B. Payment obligation to Commence Construction

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- 2.1.3 The Generator shall deliver to EGAT written confirmation of payment by the Generator of at least thirty million US Dollars (USD 30,000,000) or such equivalent amount in other currencies as a non-refundable advance payment to the EPC Contractors pursuant to the EPC Contracts (the “**First Payment**”), together with a copy of all terms and conditions set forth in the EPC Contracts applicable or otherwise related or relevant to such advance payment, on or before the Scheduled First Payment Date.
- 2.1.4 Schedule 22 as at the Execution Date describes the Generator’s plan as at the Execution Date to draw down funding under the Financing Documents at the Financial Close Date for the construction of the Generator System following the Financial Close Date. The Generator may, upon execution of the Financing Documents, substitute Schedule 22 with such other draw down schedule agreed to by the Lenders and as set out in the Financing Documents. Each material deviation from the scheduled draw down and the reasons therefor shall be reasonably described in the first monthly progress report to be submitted by the Generator to EGAT pursuant to Section 2.3.1(f) following the occurrence of each such material deviation. The Generator shall provide such information as EGAT may reasonably request in order for EGAT to verify the status of the actual funding drawn downs, including independent written confirmation of such draw downs by the Security Agent acting on behalf of the Lenders pursuant to the Financing Documents.

**C. Obligation to achieve the Connection Date**

- 2.1.5 Subject to Section 8.3.1 as regards permitted extensions of Milestone Dates, the Generator shall:
- (a) cause the Acceptance Date of the Certificate of Readiness for Connection of the Generator Subsystem (i) to occur on or before the Scheduled Generator Interconnection Facilities Ready Date (“**SGIRD**”) in accordance with Sections 2.4, 2.6 and 2.10;
  - (b) cause the Acceptance Date of the Certificate of Readiness for Connection of the Generator Subsystem (ii) to occur on or before the Scheduled Common Interconnection Facilities Ready Date (“**SCIRD**”) in accordance with Sections 2.4, 2.6 and 2.10; and
  - (c) cause the Acceptance Date of the Certificate of Readiness for Connection of the Generator Subsystems (iii) to (viii) to occur on or before the Scheduled Generator Connection Ready Date (“**SGCRD**”) in accordance with Sections 2.4, 2.7, 2.8, 2.9 and 2.10, respectively and as applicable.

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2.1.6 Subject to Section 8.3.1 as regards permitted extensions of Milestone Dates, EGAT shall:

- (a) cause the Acceptance Date of the Certificate of Readiness for Connection of the EGAT Subsystem (i) to occur on or before the Scheduled EGAT Interconnection Facilities Ready Date (“**SEIRD**”) in accordance with Sections 2.5, 2.6 and 2.10; and
- (b) cause the Acceptance Date of the Certificate of Readiness for Connection of the EGAT Subsystems (ii) to (vii) to occur on or before the Scheduled EGAT Connection Ready Date (the “**SECRD**”) in accordance with Sections 2.5, 2.7, 2.8, 2.9 and 2.10, respectively and as applicable.

2.1.7 (a) EGAT shall: (i) comply with all applicable Laws of Thailand relating to obtaining Governmental Approvals in order to acquire, maintain and exercise the ownership rights in respect of that property which is required for the construction, operation and maintenance of the Loei 2 Substation; and (ii) acquire the ownership rights relating to the Loei 2 Substation by the date specified in Section 2.1.6(b).

- (b) EGAT shall: (i) comply with all applicable Laws of Thailand relating to obtaining Governmental Approvals in order to acquire, maintain and exercise rights of way, easements and continuing access rights (the “**EGAT Access Rights**”) in respect of that property to which such rights of way, easements and/or continuing access rights are required for the construction, operation, maintenance, replacement and removal without interference of the EGAT Interconnection Facilities, the EGAT Transmission Line and the Common Interconnection Facilities located on the Thai side of the Delivery Point; and (ii) acquire the EGAT Access Rights relating to the EGAT Interconnection Facilities, the EGAT Transmission Line and the Common Interconnection Facilities located on the Thai side of the Delivery Point.

For the avoidance of doubt, any breach on the part of EGAT of the obligations set forth in Sections 2.1.7(a) or 2.1.7(b) shall not in and of itself constitute an EGAT Event of Default separate from or in addition to the EGAT Event of Default set forth in Section 10.1.1(f), and any such breach shall not by simply having occurred provide the basis for termination of this Agreement unless such breach (either singly or in combination with the effects of other events and circumstances that do not constitute Force Majeure) results in a degree of delay in the construction of the EGAT Transmission Facilities that would be sufficient to result in an EGAT Event of Default pursuant to Section 10.1.1(f).

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- (c) Notwithstanding Sections 11.1(a) and 11.1(c), any delay or failure on the part of EGAT to acquire all or a portion of the EGAT Access Rights as required by Sections 2.1.7(b)(i) and 2.1.7(b)(ii), including such delay or failure due to EGAT's failure to be duly authorized by the relevant authorities to commence court/judicial action and/or to use, cause to be used or to threaten the use of force or violence against, the eviction or condemnation of or otherwise to deprive any Person (including the owners or possessors of any portion of the property which is or is intended to be the subject of such EGAT Access Rights) of its full and exclusive use of its property, shall constitute an EGAT Force Majeure and shall not under any circumstances constitute a Thai Political Force Majeure.
- (d) EGAT shall defend any legal proceeding, any lawsuit, judicial action or any other proceeding against EGAT in relation to its acquisition and/or exercise and/or maintenance of any EGAT Access Rights.
- (e) After acquiring the EGAT Access Rights, EGAT shall maintain and exercise the same as required to perform its obligations under this Agreement.

**D. Obligation to achieve the Energization Date**

2.1.8 Subject to Section 8.3.1 as regards permitted extensions of Milestone Dates, the Generator shall cause:

- (a) the Acceptance Date of the Certificate of Readiness for Energization of the Generator Subsystem (ix) to occur on or before the Scheduled First Unit Commissioning Ready Date (“**SCRD<sub>1</sub>**”) in accordance with Sections 2.4 and 2.10;
- (b) the Acceptance Date of the Certificate of Readiness for Energization of the Generator Subsystem (x) to occur on or before the Scheduled Second Unit Commissioning Ready Date (“**SCRD<sub>2</sub>**”) in accordance with Sections 2.4 and 2.10;
- (c) the Acceptance Date of the Certificate of Readiness for Energization of the Generator Subsystem (xi) to occur on or before the Scheduled Third Unit Commissioning Ready Date (“**SCRD<sub>3</sub>**”) in accordance with Sections 2.4 and 2.10;
- (d) the Acceptance Date of the Certificate of Readiness for Energization of the Generator Subsystem (xii) to occur on or before the Scheduled Fourth Unit Commissioning Ready Date (“**SCRD<sub>4</sub>**”) in accordance with Sections 2.4 and 2.10;
- (e) the Acceptance Date of the Certificate of Readiness for Energization of the Generator Subsystem (xiii) to occur on or

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before the Scheduled Fifth Unit Commissioning Ready Date (“**SCRD<sub>5</sub>**”) in accordance with Sections 2.4 and 2.10;

- (f) the Acceptance Date of the Certificate of Readiness for Energization of the Generator Subsystem (xiv) to occur on or before the Scheduled Sixth Unit Commissioning Ready Date (“**SCRD<sub>6</sub>**”) in accordance with Sections 2.4 and 2.10;
- (g) the Acceptance Date of the Certificate of Readiness for Energization of the Generator Subsystem (xv) to occur on or before the Scheduled Seventh Unit Commissioning Ready Date (“**SCRD<sub>7</sub>**”) in accordance with Sections 2.4 and 2.10; and
- (h) the Acceptance Date of the Certificate of Readiness for Energization of the Generator Subsystems (ii) to (viii) to occur on or before the Scheduled Energization Date (“**SED**”) in accordance with Sections 2.4, 2.7, 2.8, 2.9 and 2.10, respectively and as applicable.

2.1.9 Subject to Section 8.3.1 as regards permitted extensions of Milestone Dates, EGAT shall cause the Acceptance Date of the Certificate of Readiness for Energization of the EGAT Subsystems (ii) to (vii) to occur on or before the Scheduled Energization Date (“**SED**”) in accordance with Sections 2.5, 2.7, 2.8, 2.9 and 2.10, respectively and as applicable.

#### **E. Obligation to achieve the Commercial Operation Date**

2.1.10 Subject to Sections 2.10.4(a)(vi), 2.10.4(i) and 8.3.1, the Generator shall cause the Acceptance Date of the Certificate of Readiness for Operation of all Generator Subsystems to occur on or before the Scheduled Commercial Operation Date (“**SCOD**”) in accordance with Sections 2.4, 2.7, 2.8, 2.9 and 2.10, respectively and as applicable.

2.1.11 Subject to Sections 2.10.4(a)(vi), 2.10.4(i) and 8.3.1, EGAT shall cause the Acceptance Date of the Certificate of Readiness for Operation of all EGAT Subsystems to occur on or before the Scheduled Commercial Operation Date (“**SCOD**”) in accordance with Sections 2.5, 2.7, 2.8, 2.9 and 2.10, respectively and as applicable.

## **2.2 Licenses and Approvals**

2.2.1 The Generator, at its own cost and expense, shall acquire and maintain in effect at all times until the Term Termination Date:

- (a) all corporate consents and approvals;
- (b) all Governmental Approvals required of Thai Governmental Authorities and Lao Governmental Authorities; and

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- (c) all other permits, licenses, consents and approvals required under the Law of Thailand and the Law of the Lao PDR;

which are or may be required in order to enable the Generator to enter lawfully into this Agreement and to construct, operate, maintain and repair the Generator System and the Common Interconnection Facilities (including to construct and install the Interconnection Facilities across the Thai-Laos border on the part of the Generator), as appropriate, and to deliver electrical energy therefrom to the Delivery Point for the EGAT System, all in accordance with, and otherwise to perform its obligations under, this Agreement.

2.2.2 EGAT, at its own cost and expense, shall acquire and maintain in effect at all times until the Term Termination Date:

- (a) all corporate consents and approvals; -
- (b) all Governmental Approvals required of Thai Governmental Authorities; and
- (c) all other permits, licenses, consents and approvals required by the Law of Thailand;

which are or may be required in order to enable EGAT to enter lawfully into this Agreement and to construct, operate, maintain and repair the relevant parts of the EGAT System (including the EGAT Transmission Facilities) and the Common Interconnection Facilities (including to construct and install the Interconnection Facilities across the Thai-Laos border on the part of EGAT), as appropriate, all in accordance with, and otherwise to perform its obligations under, this Agreement.

### 2.3 Delivery of Documents

2.3.1 Subject to Section 2.3.5, the Generator shall deliver to EGAT the following documents on or before the dates specified, with all costs associated therewith to be borne by the Generator:

- (a) within one hundred and eighty (180) days after the Execution Date, two (2) copies of the following (as defined in the Concession Agreement):
- (i) the Environment Impact Assessment Study;
- (ii) the Environmental Management Plan;
- (iii) the Social Impact Assessment;
- (iv) the Health Impact Assessment;

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- (v) the Resettlement Action Plan; and
- (vi) the Social Development Plan;
- (b) no later than thirty (30) days after the Execution Date, two (2) copies of the Final Concept Design;
- (c) no later than the Financial Close Date, a copy of the executed and fully effective Lease Agreement;
- (d) after the execution thereof, two (2) copies of each of the EPC Contracts (excluding commercial information) and, if applicable, the O&M Contract (excluding commercial information);
- (e) within sixty (60) days after the Financial Close Date, certified copies of the Financing Documents as of the Financial Close Date (including each of the executed facility agreements, common terms and/or intercreditor agreements and relevant hedging agreements entered into as of the Financial Close Date);
- (f) during the period from the Execution Date and ending on the Commercial Operation Date:
  - (i) within fifteen (15) days after the end of the first full calendar month following the Execution Date, and thereafter fifteen (15) days after the close of each calendar quarter prior to the Financial Close Date, two (2) copies of quarterly project development report in the form set forth in Schedule 19; and
  - (ii) within twenty (20) days after the end of the first full calendar month following the Financial Close Date and thereafter on or before the twentieth (20th) day of every month until the Commercial Operation Date, two (2) copies of monthly progress report for such month on the activities of the immediately preceding month in the form set forth in Schedule 19.

Each quarterly project development report and monthly progress report shall set forth the significant events and circumstances that occurred during the relevant period which, in the reasonable opinion of the Generator, are likely (either singly or in combination with the effects of prior events and circumstances) to have a material adverse effect on the construction and Commissioning Testing of any Generator Subsystem in accordance with the contractual requirements set forth herein. Each monthly progress report shall include

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notification to EGAT of any changes to the construction schedules and/or the likely effects of such changes on the scheduled Commissioning Testing of all Generator Subsystems, and any material deviations of: (i) the actual draw downs from the schedule for such draw downs set forth in Schedule 22; and (ii) the actual construction activities from the schedules for such construction activities set forth in Schedule 18, together with an explanation as to the causes and reasons for such deviations and the remedial actions already undertaken or that are planned to be undertaken in order to achieve the original schedules therefor.

For the avoidance of doubt, a deviation from the respective draw down schedule and/or construction schedule shall not in and of itself constitute a Generator Event of Default and shall not by simply having occurred constitute a basis for termination of this Agreement unless such deviation (either singly or in combination with the effects of other events and circumstances) results in a degree of project development delay that would be sufficient to result in a Generator Event of Default pursuant to Section 10.2.1(h);

- (g) (i) within sixty (60) days after completion of the relevant Factory Acceptance Tests for the relevant equipment; and (ii) at least twenty-one (21) days prior to the date to commence the Pre-Energization Commissioning of each Generating Unit, for those major equipment first assembled at the Site and incorporated into each such Generating Unit, two (2) copies of manufacturers' specifications, certificates and test reports received by the Generator;
- (h) promptly upon receipt by the Generator, two (2) copies of all insurance policies and certificates of insurance effected by the Generator pursuant to the requirements of Section 18.1;
- (i) following the completion of tests or series of tests carried out by the Generator or any of its contractors in the course of the Commissioning Testing of the relevant Generator Subsystem:
  - (i) within seven (7) days after completion of such tests, two (2) copies of the test data; and
  - (ii) within thirty (30) days after completion of any report regarding such tests or series of tests, two (2) copies of any test report summarizing the results of such test or commenting thereon; and
- (j) on or before the fifteenth (15th) day after the Commercial Operation Date and after the end of every 6-month period

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commencing from the Commercial Operation Date until the date on which Debt is fully repaid, a report on the amount of Debt that is outstanding on the Commercial Operation Date and at the end of each such 6-month period.

- 2.3.2 (i) Within twenty (20) days after the end of the first full calendar month following the EGAT Construction Obligation Commencement Date; and (ii) on or before the twentieth day of every month thereafter until the Commercial Operation Date, EGAT shall submit to the Generator, with all associated costs to be borne by EGAT, two (2) copies of the monthly progress report on the activities of the immediately preceding month in the form set forth in Schedule 19. Each monthly progress report shall set forth the significant events and circumstances that occurred during the relevant period which, in the reasonable opinion of EGAT, are likely (either singly or in combination with the effects of prior events and circumstances) to have a material adverse effect on the construction and scheduled Commissioning Testing of the EGAT Transmission Facilities and, if applicable, the Common Interconnection Facilities, in accordance with the contractual requirements set forth herein. Each monthly progress report shall include notification to the Generator of any changes to the construction schedules, the likely effects of such changes on the scheduled Commissioning Testing of the EGAT Transmission Facilities and/or Common Interconnection Facilities, any effects thereof which may impact the start-up and testing schedule therefor and any material deviations of actual construction activities from the schedules for such construction activities set forth in Schedule 18, together with an explanation as to the causes and reasons for such deviations and the remedial actions already undertaken or that are planned to be undertaken in order to achieve the original schedules therefor.

For the avoidance of doubt, a deviation from the construction schedule shall not in and of itself constitute an EGAT Event of Default and shall not by simply having occurred constitute a basis for termination of this Agreement unless such deviation (either singly or in combination with the effects of other events and circumstances) results in a degree of project development delay that would be sufficient to result in an EGAT Event of Default pursuant to Section 10.1.1(f).

- 2.3.3 References in Section 2.3.1 to any copy document shall, where the context shall admit, denote a copy certified as a true copy of the original by an authorized officer of the Generator. Further, any documents required to be provided by one Party to the other pursuant to this Agreement, when written in a language that is neither English nor Thai, shall be delivered with a Thai translation certified by an officer of the delivering Party as being a true and correct translation thereof.

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- 2.3.4 (a) The Generator shall during the Term promptly notify EGAT of all amendments, variations, terminations or assignments of any right or benefit under the Lease Agreement, the EPC Contracts and the O&M Contract which, in the reasonable opinion of the Generator, are material and shall provide to EGAT all such information and copies of such amendments, variations, terminations or assignments of any such documents as EGAT may reasonably require; and
- (b) The Generator shall during the Term promptly notify EGAT of all proposed amendments to the Concession Agreement, and
- (i) the Generator's notification shall include a copy of the proposed amendments and a written explanation as to the need for and effects of the amendments proposed; and
- (ii) EGAT shall have a reasonable opportunity to provide to the Generator written recommendations and comments on such proposed amendments.
- (c) (i) With respect to the proposed amendments to the Concession Agreement that would materially and adversely affect the value of the Generator System as Additional Security for EGAT, such adverse effect being able to be caused by such amendments:
- (1) adversely affecting the financial health of the Generator or the market value of the Generator Assets; and/or
- (2) discriminating between the Generator and any Person that acquires the Generator Assets and becomes a successor to the interests of the Generator under the Concession Agreement;
- the Generator shall give reasonable consideration to the recommendations and comments provided thereon by EGAT but shall not be obliged to accept or follow such recommendations and comments and need not obtain the written consent of EGAT thereto prior to accepting any such amendment.
- (ii) With respect to the proposed amendments to the Concession Agreement that would materially and adversely affect one or more of the following:
- (aa) the ability of the Generator to perform its material obligations under this Agreement in full

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accordance with the requirements applicable thereto, such amendments to include any:

- (1) expansion or increase of the obligations of the Generator regarding compliance with environmental laws and requirements;
  - (2) reduction or restriction of the rights of the Generator to receive compensation due to circumstances that constitute Lao Change-in-Law and other forms of Lao Political Force Majeure; and
  - (3) reduction or restriction of the obligations of the GOL with regard to the occurrence and mitigation of any Lao Political Force Majeure; or
- (bb) the ability of EGAT to exercise, implement and enforce within the Lao PDR its rights under this Agreement to:
- (1) exercise its step-in rights pursuant to Section 10.3; or
  - (2) acquire the Generator Assets upon termination of this Agreement pursuant to Sections 10.1.3, 10.2.3, 11.7.5 and 11.8.5;

the Generator shall not execute or otherwise agree to any such proposed amendments to the Concession Agreement without the prior written consent of EGAT, such consent not to be unreasonably withheld or delayed.

- (d) Upon receipt of a written notification from EGAT as to the occurrence of a Generator Event of Default pursuant to Section 10.2.2 or upon giving written notification to EGAT as to the occurrence of a Lao Political Force Majeure pursuant to Section 11.2, and until such time as EGAT has elected not to acquire the Generator Assets pursuant to Sections 10.2.3 or 11.8.5, the Generator shall not release the GOL from any of its obligations to the Generator pursuant to the Concession Agreement or waive any claim of liability against the GOL for a breach thereof without the prior written consent of EGAT, such consent not to be unreasonably withheld or delayed.

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- 2.3.5 The Generator shall not be required to disclose, in relation to any of the documents required to be submitted to EGAT hereby, any information as to the amounts payable whether by way of price, interest, fees, costs, penalties or otherwise thereunder or otherwise reasonably determined by the Generator to be commercially sensitive (subject to providing to EGAT at EGAT's request written summaries of the reasons for any such determination).

Notwithstanding the foregoing, the Generator shall be required to disclose and submit to EGAT:

- (a) all information and supporting evidence that EGAT may reasonably require in order to determine the financial impact of any Change-in-Law or Change of Grid Code and any tariff adjustment required thereby in accordance with Section 12;
- (b) all information and supporting evidence that EGAT may reasonably require in order to determine the amount of compensation which EGAT shall pay to the Generator in accordance with Sections 10.1.3, 10.2.3, 11.7.5 and 11.8.5; and
- (c) all information and supporting evidence regarding the amount of Debt that remains outstanding, which the Generator is required to report to EGAT in accordance with Section 2.3.1(j).

- 2.3.6 The delivery of any document to EGAT pursuant to Section 2.3.1 or review thereof and comment thereon by EGAT in connection therewith shall not:

- (a) relieve the Generator from any liability or obligation under this Agreement (including any obligations which in any way relate to the ownership, financing, construction and operation of the Generator Transmission Facilities and the interconnection of those facilities with the EGAT System); and
- (b) create any obligation or liability on the part of EGAT,

provided, however, that the foregoing statement regarding the consequences of EGAT's review of and/or comment on documents so delivered by the Generator shall not relieve EGAT of any liability associated with such documents that arise independently from such delivery, review and/or comment as the result of EGAT being a party to such documents.

- 2.3.7 The delivery of any document to the Generator pursuant to Section 2.3.2 or review thereof and comment thereon by the Generator in connection therewith shall not:

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- (a) relieve EGAT from any liability or obligation under this Agreement (including any obligations which in any way relate to the ownership, financing, construction and operation of the EGAT Transmission Facilities and the interconnection of those facilities with the Generator System); and
- (b) create any obligation or liability on the part of the Generator,

provided, however, that the foregoing statement regarding the consequences of the Generator's review of and/or comment on documents delivered by EGAT shall not relieve the Generator of any liability associated with such documents that arise independently from such delivery, review and/or comment as the result of the Generator being a party to such documents.

#### **2.4 Construction, Operation, Maintenance and Repair of the Generator System**

2.4.1 Notwithstanding any provisions in any Project Agreement to the contrary, the Generator shall throughout the Term at its own cost and expense, either on its own behalf or through third party contractors, design, construct, install, Commission, own, operate, repair and maintain the Generator System such that it is at all times capable of operating in accordance with this Agreement (including the Interconnection Design Criteria, the Design Limits and the Contracted Operating Characteristics or Registered Operating Characteristics, as applicable), the Concession Agreement, applicable Law (inclusive of environmental Law), the Grid Code, Prudent Utility Practice and in a professional and workmanlike manner. For the avoidance of doubt, notwithstanding the Generator's obligation provided in this Section 2.4.1, the Generator shall not be entitled to claim relief on the basis of or by referring to any provision of any Project Agreement in the event that the Generator breaches any of its obligations in this Agreement.

Part I and Part II of Schedule 11 set out: (i) a general description of the Generator System; and (ii) the Design Limits. Part III and Part IV of Schedule 1 set out: (i) the Contracted Operating Characteristics; and (ii) the operational requirements for the Generator System.

2.4.2 Subject to Section 2.3.5, no later than ninety (90) days after the Execution Date the Generator shall submit for the review by and comments of EGAT two (2) copies of the documents that set forth the design documents, specifications and equipment that is relevant to either: (i) the scope, scheduling and duration of construction activities; or (ii) the capability of the Generator System to perform in accordance with the Interconnection Design Criteria, the Design Limits or the Contracted Operating Characteristics, as applicable, and other material performance requirements sets forth herein.

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EGAT shall review the foregoing materials to identify potential incompatibilities between these materials and:

- (a) the design, construction, installation, operation and maintenance of the Generator System as required by or contemplated under this Agreement; or
- (b) the operation of the interconnected system comprising the EGAT System and the Generator System; or
- (c) the timing of the work required to be performed by the Generator or by EGAT pursuant to this Agreement.

Should, in the reasonable opinion of EGAT, there appear to be such potential incompatibilities, EGAT may identify such potential incompatibilities and may recommend within sixty (60) days after the receipt of such materials that the Generator should make appropriate remedy to such potential incompatibilities.

- 2.4.3 The Generator shall obtain EGAT's written consent prior to any material modification to the Generator System that would affect the capability of the Generator System to operate at all times in accordance with the Interconnection Design Criteria, the Design Limits and the Contracted Operating Characteristics or Registered Operating Characteristics, as applicable, such consent by EGAT not to be unreasonably withheld or delayed; provided, however, that such consent shall not release the Generator from any of its responsibilities and obligation under this Agreement. The Generator shall provide EGAT with sixty (60) day's advance written notice of any such material modification.

For the purposes of this Section 2.4.3, material modifications are changes intended to be made to the Generator System which may reasonably be expected to have a material adverse impact on:

- (i) the capability of the Generator System to operate in accordance with the contractual requirements of this Agreement, including the Interconnection Design Criteria, the Design Limits, and the Contracted Operating Characteristics or Registered Operating Characteristics, as applicable;
- (ii) the safety, reliability, or useful life of the Generator System;
- (iii) the operation of the Generator System in accordance with Prudent Utility Practice;
- (iv) the safety or reliability of the EGAT System once interconnected to the Generator System or the stability of the interconnected system comprising the EGAT System and the Generator System; and/or

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- (v) the capability of the Generator System with regard to technical performance, safety and/or environmental matters.

As soon as reasonably practicable, but in any event not more than five (5) Business Days (in the case of material modifications prior to the Commercial Operation Date) or fifteen (15) Business Days (in the case of material modifications after the Commercial Operation Date) after receiving the Generator's request, EGAT shall provide either:

- (a) its written consent to the modification;
- (b) its reason for denying its consent; or
- (c) a notice that, due to the need for additional material information or due to the complexity of the modification, additional review time is required.

In the case of (c) above, the Parties shall promptly agree on what additional information is required, if any, and the date by which such approval shall be given or denied. If such consent is not given or denied by such agreed date, the modification shall be deemed consented.

2.4.4 Notwithstanding any other provisions of this Agreement to the contrary, any review, comment on and/or approval by EGAT of any material, documents, designs, drawings, schedules, design data or other information submitted by the Generator concerning the Generator System pursuant to this Agreement (including any such materials related to modifications approved by EGAT under Section 2.4 regardless of whether such materials incorporated revisions to such modifications requested by EGAT) or prior to the execution of this Agreement, any inspection or testing of the Generator System by EGAT, any presence of EGAT's representatives to witness any test performed by the Generator or the Generator's contractors, whether undertaken pursuant to this Agreement or not, shall not: (i) be deemed to constitute an endorsement of the Generator System nor a warranty or other assurance by EGAT of the safety, durability or reliability of the Generator System; (ii) constitute an assumption on the part of EGAT of any responsibility for the content of such materials; and (iii) release the Generator from any liability or obligation under this Agreement.

2.4.5 Subject to compliance with such reasonable safety and security procedures specified by the Generator or its contractors, the Generator shall allow authorized representatives of EGAT to visit the construction site at any reasonable time during construction, start-up and testing of the Generator System, provided that EGAT shall notify the Generator in writing reasonably in advance of any visit and shall cooperate with the Generator to minimize interference with the

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Generator's contractors at the Site. The Generator shall assist and facilitate such visit by EGAT's representatives.

- 2.4.6 The appointment by the Generator of any construction contractor to design, construct, install, complete and Commission part or all of the Generator System shall not relieve the Generator of any liability under this Agreement resulting from the act or omission by the contractor or from a breach by the Generator of any term or condition of this Agreement.

The Generator shall notify EGAT of any replacement of the EPC Contractors for the Generator System.

- 2.4.7 The Parties shall cooperate with each other in accordance with this Agreement regarding the construction of the Generator Subsystems and the EGAT Subsystems, the connection between the Generator System and the EGAT System and the Energization of the Generator System.

## **2.5 Construction, Operation, Maintenance and Repair of the EGAT Transmission Facilities**

- 2.5.1 Other than as otherwise expressly agreed in this Agreement, EGAT shall throughout the Term at its own cost and expense design, construct, install, Commission, own, operate, repair and maintain the EGAT Transmission Facilities to enable EGAT to Dispatch the Facility and to accept electrical energy from the Generator System in accordance with this Agreement (including the Interconnection Design Criteria), the Grid Code, Prudent Utility Practice and applicable Law (including environmental Law).

- 2.5.2 EGAT shall obtain the Generator's written consent prior to any material modification to the EGAT Transmission Facilities that would affect the capability of the EGAT Transmission Facilities to operate at all times in accordance with the Interconnection Design Criteria, such consent by the Generator not to be unreasonably withheld or delayed; provided, however, that such consent shall not release EGAT from any of its responsibilities under this Agreement. EGAT shall provide the Generator with sixty (60) day's advance written notice of any such material modification.

For the purposes of this Section 2.5.2, material modifications are changes intended to be made to the EGAT Transmission Facilities which may reasonably be expected to have a material adverse impact on:

- (i) the capability of the EGAT Transmission Facilities to operate in accordance with the requirements of this Agreement, including the Interconnection Design Criteria;

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- (ii) the safety, reliability, or useful life of the EGAT Transmission Facilities;
- (iii) the operation of the EGAT Transmission Facilities in accordance with Prudent Utility Practice;
- (iv) the safety or reliability of the Generator System once interconnected to the EGAT System or the stability of the interconnected system comprising the EGAT System and the Generator System; and/or
- (v) the capability of the EGAT Transmission Facilities with regard to technical performance, safety and/or environmental matters.

As soon as reasonably practicable, but in any event not more than five (5) Business Days (in the case of material modifications prior to the Commercial Operation Date) or fifteen (15) Business Days (in the case of material modifications after the Commercial Operation Date) after receiving EGAT's request, the Generator shall provide either:

- (a) its written consent to the modification;
- (b) its reason for denying its consent; or
- (c) a notice that, due to the need for additional material information or due to the complexity of the modification, additional review time is required.

In the case of (c) above, the Parties shall promptly agree on what additional information is required, if any, and the date by which such approval shall be given or denied. If such consent is not given or denied by such agreed date, the modification shall be deemed consented.

2.5.3 Notwithstanding any other provisions of this Agreement to the contrary, any review, comment on and/or approval by the Generator of any material, documents, designs, drawings, schedules, design data or other information submitted by EGAT concerning the EGAT Transmission Facilities pursuant to this Agreement (including any such materials related to modifications approved by the Generator under Section 2.5 regardless of whether such materials incorporated revisions to such modifications requested by the Generator) or prior to the execution of this Agreement, any inspection or testing of the EGAT Transmission Facilities by the Generator, any presence of the Generator's representatives to witness any test performed by EGAT or its contractors, whether undertaken pursuant to this Agreement or not, shall not: (i) be deemed to constitute an endorsement of the EGAT Transmission Facilities nor a warranty or other assurance by the Generator of the safety, durability or reliability of the EGAT

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Transmission Facilities; (ii) constitute an assumption on the part of the Generator of any responsibility for the content of such materials; and (iii) release EGAT from any liability or obligation under this Agreement.

2.5.4 Subject to compliance with such reasonable safety and security procedures specified by EGAT or its contractors, EGAT shall allow authorized representatives of the Generator and such representatives of the Lenders as are designated by the Generator, to visit the construction site at any reasonable time during the construction and installation of the EGAT Transmission Facilities. EGAT shall assist and facilitate such visit by the representatives of the Generator and the Lenders.

2.5.5 The appointment by EGAT of any contractor to design, construct, install, Commission, operate and maintain the EGAT Transmission Facilities or any part thereof shall not relieve EGAT of any liability under this Agreement resulting from a breach by EGAT of any term or condition of this Agreement.

## 2.6 Interconnection Facilities

### 2.6.1 Definition of Interconnection Facilities

- (a) The Interconnection Facilities shall comprise:
- (i) the EGAT Interconnection Facilities;
  - (ii) the Generator Interconnection Facilities; and
  - (iii) the Common Interconnection Facilities.
- (b) The EGAT Interconnection Facilities and the Generator Interconnection Facilities shall each comprise in Thailand and the Lao PDR respectively the relevant **Dead End Tower** described in Paragraph 2 of Schedule 13.
- (c) The Common Interconnection Facilities shall comprise the equipment and facilities described in Paragraph 2 of Schedule 13.
- (d) The detailed design of the Interconnection Facilities shall comply with the Interconnection Design Criteria set out in Paragraph 4 of Schedule 13, which shall take into account, inter alia:
- (i) their compatibility with other EGAT Subsystems and Generator Subsystems;

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- (ii) construction requirements;
- (iii) operation and maintenance requirements;
- (iv) ease of repair;
- (v) safety requirements; and
- (vi) cost.

Each Party shall:

- (1) develop its own detailed design of that part of the Interconnection Facilities under its responsibility;
- (2) diligently exchange with the other the information necessary to allow the other Party to complete its detailed design in accordance with the requirements of this Agreement; and
- (3) submit the detailed design of the Interconnection Facilities for which it is responsible to procure to the other Party by the date falling thirty-six (36) Full Calendar Months after the Financial Close Date.

Any and all portion of the detailed design of the Interconnection Facilities submitted by each Party as provided herein shall, to the extent that any modification thereof shall affect the design and/or installation of the Interconnection Facilities responsible by the other Party, be binding on the issuing Party upon its submittal.

#### 2.6.2 Procurement, Construction and Stringing

- (a) Each Party will separately carry out its own tendering process and enter into separate construction contracts in order to procure the construction of the relevant portions of the Interconnection Facilities for which each Party is responsible;
- (b) EGAT shall complete the EGAT Interconnection Facilities and the Generator shall complete the Generator Interconnection Facilities by the dates specified in Sections 2.1.6(a) and 2.1.5(a), respectively; and
- (c) the Generator shall procure all equipment required in respect of the Common Interconnection Facilities and be responsible for the completion of all stringing work required in respect of the Common Interconnection Facilities in accordance with Schedule 13, at no cost to EGAT; provided that:
  - (i) in the event that any Governmental Approvals are

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required under the Law of Thailand for the installation hereunder of the Common Interconnection Facilities from the relevant Thai Governmental Authorities, EGAT will assist the Generator in obtaining all such Governmental Approvals; and

- (ii) to the extent that EGAT has acquired the rights to complete the Common Interconnection Facilities, whether resulting from its acquisition of the EGAT Access Rights or otherwise, EGAT shall grant the Generator equivalent rights necessary for the installation of the Common Interconnection Facilities.

For the avoidance of doubt, the portion of the Common Interconnection Facilities on the Thai side of the Delivery Point shall be construed as part of the Generator Transmission Facilities until the Acceptance Date of the relevant Certificate of Readiness for Energization, whereupon Section 2.6.3(b)(i) shall apply.

### 2.6.3 Integration of Interconnection Facilities

- (a) Upon the Acceptance Date of the relevant Certificate of Readiness for Connection for the Common Interconnection Facilities:
  - (i) the EGAT Interconnection Facilities shall be deemed to be part of the EGAT Transmission Line; and
  - (ii) the Generator Interconnection Facilities shall be deemed to be part of the Generator Transmission Line.
  - (iii) the Generator shall, within thirty (30) days thereafter, deliver to EGAT the spare part set out in Paragraph 6 of Schedule 13 at a location in Thailand to be determined by EGAT.
- (b) Upon the Acceptance Date of the relevant Certificate of Readiness for Energization for the Common Interconnection Facilities:
  - (i) the portion of the Common Interconnection Facilities located on the Thai side of the Delivery Point shall be deemed to be part of the EGAT Transmission Line; and
  - (ii) the portion of the Common Interconnection Facilities located on the Lao side of the Delivery Point shall be deemed to be part of the Generator Transmission Line.

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#### 2.6.4 Operation and Maintenance

- (a) (i) EGAT shall be responsible for the operation, repair and maintenance of the EGAT Interconnection Facilities and the portion of the Common Interconnection Facilities located on the Thai side of the Delivery Point; and (ii) the Generator shall be responsible for the operation, repair and maintenance of the Generator Interconnection Facilities and the portion of the Common Interconnection Facilities located on the Lao side of the Delivery Point.
- (b) EGAT and the Generator shall use their best efforts to establish repair and maintenance schedules of the Interconnection Facilities in order to minimize disruption to the operation of the Generator System to deliver electrical energy to the Delivery Point for the EGAT System.

#### 2.6.5 Repair of the Interconnection Facilities

- (a) If any portions of the Interconnection Facilities are damaged during either the construction phase or the operation phase, EGAT and the Generator shall use their best efforts to repair (including the removal of any damaged parts) their respective part of the Interconnection Facilities within the shortest possible time period.
- (b) (i) EGAT and the Generator shall ensure that at all times they shall each have at least one spare Dead End Tower at a location to be notified to the other Party to be immediately available for installation in the event of any required repair.
- (ii) The Generator shall provide to EGAT all necessary hardware (including fittings and insulator, but excluding wires and earthwires) required for the first major repair of the Common Interconnection Facilities located on the Thai side of the Delivery Point prior to the time at which such hardware is required for the repair work. In the event that the repair work is delayed due to unavailability of such hardware, the additional duration of the damages shall be attributable to the Generator.
- (c) EGAT shall obtain and maintain in full force and effect all Governmental Approvals required under the Law of Thailand for the Generator to undertake any repair work to the Interconnection Facilities (including the EGAT Interconnection Facilities) and the Common Interconnection Facilities (including the removal of any damaged parts) throughout the Term. To the extent that EGAT has acquired the rights to

repair the EGAT Interconnection Facilities and the Common Interconnection Facilities (including the removal of any damaged parts), whether resulting from its acquisition of the EGAT Access Rights or otherwise, EGAT shall grant the Generator equivalent rights necessary for the repair of the EGAT Interconnection Facilities and/or the Common Interconnection Facilities (including the removal of any damaged parts).

- (d) The Generator shall obtain and maintain in full force and effect all Governmental Approvals required under the Law of the Lao PDR for EGAT to undertake any repair work to the Interconnection Facilities (including the Generator Interconnection Facilities) and the Common Interconnection Facilities (including the removal of any damaged parts) throughout the Term.
- (e) Subject to the dispute resolution procedure set out in Section 2.6.5(g):
- (i) if the damage was caused by the act or omission of EGAT, EGAT shall be responsible for repairing any such damage (including the stringing of the Common Interconnection Facilities and the removal of any damaged parts). For the period starting from (and including) the date of occurrence of damage up to (but excluding) the date that the relevant portions of Interconnection Facilities have been restored to the same or better quality as prior to the damage, the Monthly Energy Payment to be paid by EGAT to the Generator in respect of the period of repair shall be based on the Final Declaration of the Generator without taking into account the effect of any Unavailability associated with such damage determined in accordance with Schedule 3 of this Agreement;
- (ii) if the damage was caused by the act or omission of the Generator, the Generator shall be responsible for repairing any such damage (including the stringing of the Common Interconnection Facilities and the removal of any damaged parts). For the period starting from (and including) the date of occurrence of damage up to (but excluding) the date that the relevant portions of Interconnection Facilities have been restored to the same or better quality as prior to the damage,
- (1) the Generator shall be liable to pay liquidated damages for the Generator System Outage arising during such period of repair; and

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- (2) the Monthly Energy Payment to be paid by EGAT to the Generator in respect of the period of repair shall be based on the Final Declaration of the Generator less the Monthly Unavailability associated with such damage determined in accordance with Schedule 3 of this Agreement;
- (iii) if the damage was caused by a Thai Political Force Majeure (affecting EGAT or the Generator) or an EGAT Force Majeure, EGAT shall be responsible for repairing such damage (including the stringing of the Common Interconnection Facilities and the removal of any damaged parts) and shall be responsible for paying Force Majeure Offset Amounts in accordance with Section 11.7.4 on a monthly basis for such months associated with the period starting from (and including) the date of occurrence of damage up to (but excluding) the date that the relevant portions of Interconnection Facilities have been restored to the same or better quality as prior to the damage as follows: (1) in the event that the damage was caused by a Thai Political Force Majeure affecting EGAT or an EGAT Force Majeure, such Force Majeure Offset Amounts payable by EGAT to the Generator shall be calculated on the basis of the relevant Weekly Force Majeure Dispatch Shortfall Energy provided in Schedule 10; or (2) in the event that the damage was caused by a Thai Political Force Majeure affecting the Generator, such Force Majeure Offset Amounts payable by EGAT to the Generator shall be calculated on the basis of the relevant Weekly Force Majeure Unavailability provided in Schedule 10 of this Agreement; and
- (iv) if the damage was caused by a Lao Political Force Majeure (affecting EGAT or the Generator) or a Generator Force Majeure, the Generator shall be responsible for repairing such damage (including the stringing of the Common Interconnection Facilities and the removal of any damaged parts) and the Generator shall be responsible for paying Force Majeure Offset Amounts in accordance with Section 11.8.4 of this Agreement on a monthly basis for such months associated with the period starting from (and including) the date of occurrence of damage up to (but excluding) the date that the relevant portions of Interconnection Facilities have been restored to the same or better quality as prior to the damage as follows: (1) in the event that the damage was caused by a Lao Political

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Force Majeure affecting EGAT, such Force Majeure Offset Amounts payable by the Generator to EGAT shall be calculated on the basis of the relevant Weekly Force Majeure Dispatch Shortfall Energy provided in Schedule 10; or (2) in the event that the damage was caused by a Lao Political Force Majeure affecting the Generator or a Generator Force Majeure, such Force Majeure Offset Amounts payable by the Generator to EGAT shall be calculated on the basis of the relevant Weekly Force Majeure Unavailability provided in Schedule 10 of this Agreement.

- (f) Upon the occurrence of damage to any portions of the Interconnection Facilities, EGAT and the Generator shall communicate with each other (whether on the telephone, by meeting or otherwise) within twenty-four (24) hours of the occurrence of damage and shall, within such twenty-four (24) hours or such longer period as EGAT and the Generator may agree, decide whether the damage was caused by the act or omission of EGAT, the Generator, a Thai Political Force Majeure, a Lao Political Force Majeure, an EGAT Force Majeure or a Generator Force Majeure. In the event that:
- (i) EGAT and the Generator agree on the causation of the damage, the party responsible for the repair, the determination of Monthly Energy Payment, payment of any liquidated damages (in the case of damage caused by the Generator) or, as the case may be, any Force Majeure Offset Amounts (in the case of damage caused by Force Majeure), shall be determined in accordance with Section 2.6.5(e);
  - (ii) EGAT and the Generator do not agree on the causation of the damage, either Party may refer the dispute to the arbitration tribunal in accordance with Section 13.2 and the Generator shall repair the damage to the relevant portions of the Interconnection Facilities and string the Common Interconnection Facilities (including the removal of any damaged parts). For the avoidance of doubt, neither Party shall be liable to pay any Force Majeure Offset Amounts or liquidated damages to the other Party in respect of such damages during the period of any such repair, stringing and removal undertaken by the Generator unless and until it is decided by the arbitration tribunal pursuant to Section 2.6.5(g) that such damage had been caused by either the act or omission of such Party or a Force Majeure for which such Party is responsible, as the case may be.

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- (g) In the event that either Party refers the dispute as to the causation of the damage to the Interconnection Facilities to the arbitration tribunal in accordance with Section 13.2 and:
- (i) in the event that the arbitration tribunal decides that the damage was caused by the act or omission of the Generator, the Generator shall be liable to pay liquidated damages for any Generator System Outage arising during the period of repair and all costs associated with the repair of the Interconnection Facilities and the stringing of the Common Interconnection Facilities (including the removal of any damaged parts) and the Monthly Energy Payment to be paid by EGAT to the Generator in respect of the period of repair shall be based on the Final Declaration less the Monthly Unavailability associated with such damage determined in accordance with Schedule 3 of this Agreement; or
  - (ii) in the event that the arbitration tribunal decides that the damage was caused by the act or omission of EGAT, EGAT shall be liable for all costs associated with the repair of the Interconnection Facilities and the stringing of the Common Interconnection Facilities (including the removal of any damaged parts) and the Monthly Energy Payment to be paid by EGAT to the Generator in respect of the period of repair shall be based on Final Declaration without taking into account the effect of any Unavailability associated with such damage determined in accordance with Schedule 3 of this Agreement; or
  - (iii) in the event that the arbitration tribunal decides that the damage was caused by a Thai Political Force Majeure, a Lao Political Force Majeure, an EGAT Force Majeure or, as the case may be, a Generator Force Majeure, the relevant Party shall be liable for the payment of Force Majeure Offset Amounts, determined in accordance with Sections 2.6.5(e)(ii) or 2.6.5(e)(iii), as applicable, to the other Party for the number of days required to effect the repair to the relevant portions of Interconnection Facilities and all costs associated with the repair of the Interconnection Facilities and the stringing of the Common Interconnection Facilities (including the removal of any damaged parts); or
  - (iv) in the event that the arbitration tribunal is unable to determine the causation of the damage, in respect of the period of time required to repair the Interconnection Facilities and the stringing of the Common Interconnection Facilities (including the removal of any

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damaged parts): (1) neither Party shall be liable for payment of Force Majeure Offset Amounts to the other Party; (2) the Generator shall not be liable to pay liquidated damages to EGAT for any Generator System Outage; and (3) the Monthly Energy Payment to be paid by EGAT to the Generator in respect of the period of repair shall be based on the Final Declaration less the Monthly Unavailability associated with such damage determined in accordance with Schedule 3 of this Agreement. In the event that the Generator has undertaken the repair and stringing work for the Common Interconnection Facilities (including the removal of any damaged parts), EGAT shall, upon the arbitration tribunal's decision that it is unable to determine the causation of the damage, reimburse the Generator for half of all costs associated with such repair and stringing work for the Common Interconnection Facilities (including the removal of any damaged parts) following submission to EGAT of satisfactory evidence of such actual costs incurred.

## 2.7 Metering System

2.7.1 (a) (i) Subject to Section 2.7.3(e) and Paragraph 1.2 of Part II of Schedule 14, the Generator shall procure, own, Commission, operate, maintain, test (including all Accuracy Tests), repair and replace, at its own cost and expense and in accordance with Prudent Utility Practice and the requirements of this Agreement:

(A) the Generator Metering System, comprising:  
(aa) the Xayaburi Metering System and (bb) the Unit Metering System; and

(B) the Water Measuring System,

together with all associated equipment and facilities, all being installed at the locations designated therefor in the Generator System as specified in Parts II and III respectively of Schedule 14. Such installation shall be completed in accordance with the requirements set out in Sections 2.1 and 2.10.

(ii) EGAT shall procure, own, Commission, operate, maintain, test (including all Accuracy Tests), repair and replace, in accordance with Prudent Utility Practice and the requirements of this Agreement, the Loei 2 Metering System and all associated equipment and facilities, all being installed at the locations designated therefor in the Loei 2 Substation as specified in Part I

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of Schedule 14. Such installation shall be completed in accordance with the requirements set out in Sections 2.1 and 2.10.

(iii) Subject to Section 2.7.3(e) and Paragraph 3.2 of Part I of Schedule 14, all such costs of the procurement, Commissioning Testing, operation, maintenance (including all Accuracy Tests), repair and replacement of the Loei 2 Metering System and all associated equipment and facilities at the Loei 2 Substation for the entire Term shall be borne by the Generator in accordance with Paragraph 3.1 of Part I of Schedule 14. In connection therewith the Generator shall:

(A) compensate EGAT on actual cost basis for such cost for which the Generator is responsible in accordance with Paragraph 3.1 of Part I of Schedule 14 which is incurred by EGAT in the procurement of such Loei 2 Metering System (the “**Generator’s LE2 Meter Procurement Cost**”), by paying EGAT two (2) installments comprising: (1) a first installment equal to seventy five percent (75%) of Generator’s LE2 Meter Procurement Cost upon delivery of the Loei 2 Metering System to EGAT; and (2) a second installment equal to twenty five percent (25%) of Generator’s LE2 Meter Procurement Cost upon completion of the Commissioning Testing thereof. Such installments shall be paid in US Dollars following submission to the Generator of satisfactory evidence of such actual costs incurred;

(B) compensate EGAT for the servicing, Accuracy Tests and maintenance of such Loei 2 Metering System for each Contract Year throughout the Term by paying EGAT an annual lump sum equal to the greater of: (1) two percent (2%) of Generator’s LE2 Meter Procurement Cost; and (2) ten thousand (10,000) US Dollars, for such servicing, Accuracy Tests and maintenance. The Generator shall: (aa) pay the first annual lump sum to EGAT upon the Commercial Operation Date; and (bb) pay the subsequent annual lump sums to EGAT upon each anniversary thereof; and

(C) in the event of failure of any equipment comprised in such Loei 2 Metering System and provided that it has been operated and

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maintained by EGAT in accordance with Prudent Utility Practice and the requirements of this Agreement, compensate EGAT for any actual replacement cost (including any additional cost related to any upgrade thereof which has been agreed between the Parties), following submission to the Generator of satisfactory evidence of such costs incurred.

- (b) The purposes of the Metering System shall be set out as follows:
- (i) The Loei 2 Metering System and the Generator Metering System shall, at the Loei 2 Metering Point and the Xayaburi Metering Point, respectively, measure the active and reactive electrical energy as set out in Schedule 14. Such measurement shall be used for the calculation of the Total Gross Electrical Energy in accordance with Part II of Schedule 7.
  - (ii) The Unit Metering System shall, at the respective Unit Metering Point, measure the Unit Energy of the relevant Generating Unit. Such measurement shall be used for the calculation of the Test Energy comprised in the Gross Electrical Energy transmitted at the Delivery Point in accordance with Part II of Schedule 7. The relevant amounts of active power and reactive power that are determined on the basis of such measurements and stored in the relevant Unit Energy Meters in accordance with Part II of Schedule 14 shall be used for the purpose of monitoring and/or verifying the active power, the reactive power and the relevant Operating Characteristics, as applicable, in respect of each relevant Generating Unit.
  - (iii) The Water Measuring System shall measure (1) the discharge rate through the turbine; (2) the upstream pond water level (3) the water level at tailrace channel and (4) the opening positions of the radial gates, all as provided in Part III of Schedule 14.

2.7.2 (a) The respective readings of the Loei 2 Metering System, the Generator Metering System and the Water Measuring System shall be made at such intervals, recorded in such manner and accessible by both Parties, in each case as provided in Schedule 14.

(b) The data of the Loei 2 Metering System shall be accessible by

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the Generator using the IP network and dial-up network comprised in the Communication System, as main path and back-up path, respectively

- (c) The data of the Generator Metering System shall be accessible by EGAT using the IP network and dial-up network comprised in the Communication System, as main path and back-up path, respectively.
- (d) Both Parties shall cooperate in respect of the data required for calculating or verifying the Monthly Energy Payment available to each of them.
- (e) At any time after the Energization Date and upon giving not less than forty-eight (48) hours written notice to the other Party, the Generator shall have the right to read in situ the display of any energy meter located in Thailand and EGAT shall have the right to read in situ the display of any energy meter located in the Lao PDR and any meter comprised in the Water Measuring System for the purpose of making or verifying any calculation required to be made under this Agreement.
- (f) EGAT, in respect of the Loei 2 Substation, and the Generator, in respect of the Xayaburi Switchyard, shall ensure that the other Party is provided, subject to due compliance by that other Party with such reasonable safety and procedural requirements as may be stipulated from time to time by the Party in possession and control of such property, access to such property, buildings and the relevant energy meter located or installed thereon, and otherwise give all such assistance as the Party requesting such reading may reasonably require therefor.
- (g) The Party providing such access to the Party requesting the reading referred to in Section 2.7.2(e) shall have the right to have a representative present during any such reading. If the representatives of both Parties are present at such reading then such reading shall be jointly taken and recorded. If the representative of the Party which is in possession and control of the property on which such energy meter is located or installed is absent at such reading, then the representative present on behalf of the Party which requested the reading referred to in Section 2.7.2(e) shall take and record such reading together with a photographic record thereof. Both Parties shall maintain a log of all such readings.

- 2.7.3 (a) Once in every Contract Year and no later than one (1) Full Calendar Month following the Term Termination Date, all equipment comprised in the Generator Metering System and

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the Water Measuring System shall be inspected and tested by the Generator and all equipment comprised in the Loei 2 Metering System shall be inspected and tested by EGAT. All such inspections and testing shall be conducted in accordance with the Post COD Testing Procedures as contemplated in Section 2.11 and the results of the Accuracy Tests of the energy meters shall be specified in the form of test report set out in Schedule 28 unless otherwise agreed to by the Parties.

- (b) The specified accuracy for each Metering Equipment (the “**Specified Accuracy**”) shall be set forth in Schedule 14.
- (c) Additional inspection of any Metering Equipment and additional Accuracy Tests of any energy meter comprised in the Loei 2 Metering System, the Generator Metering System or the Water Measuring System in addition to the annual inspection and testing referred to in Section 2.7.3(a) shall occur at any time during a Contract Year pursuant to either: (i) the Meter Reading Check Procedures set out in Part III of Schedule 14, as applicable; or (ii) either Party’s written request made to the other Party. Any such additional inspection and testing shall be conducted in accordance with the Post COD Testing Procedures as soon as reasonably practicable following the conduct of such relevant Meter Reading Check Procedures or the making of such written request therefor, as applicable.
- (d) Both annual and additional Accuracy Tests of energy meters shall be performed using a reference meter. The accuracy class of such reference meter shall: (i) be equal to or better than 0.1; and (ii) be certified every two (2) years by a third party agreed to by the Parties.
- (e) In the event that the additional Accuracy Tests occurs pursuant to the request of either Party and the Tested Accuracy is found to be no worse than the Specified Accuracy set out in Schedule 14, the Party requesting the additional Accuracy Tests shall bear the costs of such Accuracy Tests.

In the event that the additional Accuracy Tests occurs pursuant to either:

- (1) the Meter Reading Check Procedures; or
- (2) the request of either Party, and the Tested Accuracy is found to be worse than the Specified Accuracy set out in Schedule 14,

then in either case:

- (i) the cost of any such inspection and Accuracy Tests of

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any equipment comprised in the Generator Metering System and Water Measuring System shall be borne by the Generator; and

- (ii) the cost of any such inspection and Accuracy Tests of any equipment comprised in the Loei 2 Metering System, other than the cost related to replacement or procurement of spare parts reimbursable by the Generator in accordance with Section 2.7.1(a)(iii)(C), shall be borne by EGAT.
- (f) If the Tested Accuracy of any Metering Equipment is found during any annual or additional inspection and Accuracy Tests conducted in accordance with this Section 2.7.3 to be worse than the Specified Accuracy set out in the relevant portions of Schedule 14, such Metering Equipment shall as soon as reasonably practicable thereafter be repaired or replaced, as necessary and appropriate,
- (i) by the Generator or another Person acceptable to EGAT in the case of a piece of equipment comprised in the Generator Metering System or Water Measuring System; or
  - (ii) by EGAT or another Person acceptable to the Generator in the case of a piece of equipment comprised in the Loei 2 Metering System,

and thereupon such Metering Equipment shall be tested as aforesaid. Subject to the percentages set out in the table of Paragraph 3.1 of Part I of Schedule 14 and Section 2.7.1(a)(iii)(C) in the event that such Metering Equipment is comprised in the Loei 2 Metering System, all the costs incurred pursuant to and associated with the provisions in this Section 2.7.3(f) shall be borne solely by the Generator.

2.7.4 (a) The Parties shall coordinate in order to perform any inspection and additional Accuracy Tests that is required pursuant to the Meter Reading Check Procedures set out in Part III of Schedule 14 as soon as practicable.

- (b) In regard to all other inspections and testing of any Metering Equipment conducted pursuant to Sections 2.7.3(a) and 2.7.3(c), the Party responsible for conducting such inspection and testing hereunder shall give the other Party prior written notice of any such inspection and testing at least fourteen (14) days prior to the proposed date of each such inspection and testing. The Party not responsible for conducting such inspection and testing shall have the right to have an authorized representative present at any such inspection and

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testing and during any Accuracy Tests, repair, or replacement thereof, subject to compliance with such reasonable safety and procedural requirements as may be specified from time to time by the Party which is in possession and control of the property on which such Metering Equipment (including such Metering Equipment comprised in the Water Measuring System) is located.

- 2.7.5 (a) The Parties shall agree on the selection of energy meters to be assigned as Main Energy Meters and Back-Up Energy Meters, respectively, upon the completion of the Accuracy Tests of all energy meters during the Commissioning Testing.
- (b) The Meter Readings of all energy meters shall be checked on a daily basis using the procedures described in Part III of Schedule 14 (the “**Meter Reading Check Procedures**”) in order to determine their consistency and effectiveness, as further defined in Paragraph 1.3 of Part III of Schedule 14. Such consistency and effectiveness of any energy meter as determined pursuant thereto may require that the accuracy of the relevant energy meters be further confirmed by Accuracy Tests as soon as reasonably practicable.
- (c) An energy meter may be declared faulty either:
- (i) by the Party responsible for such equipment either initiated by the personnel of such Party (through maintenance, servicing, Accuracy Tests, etc.) or through the equipment’s self-diagnostic system; or
  - (ii) by either Party through the Meter Reading Check Procedures or the Accuracy Tests pursuant thereto, as applicable.

2.7.6 (a) As soon as practicable following:

- (i) any annual Accuracy Tests where the Tested Accuracy of any energy meters has been found to be worse than the Specified Accuracy as set out in the relevant part of Schedule 14; or
- (ii) any additional Accuracy Tests performed pursuant to either the Meter Reading Check Procedures or the request of a Party as set out in the relevant part of Section 2.7.3(c),

the Generator shall prepare and submit to EGAT a Meter Reconciliation Statement.

- (b) The contents of a Meter Reconciliation Statement shall include:

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- (i) the period for which such Meter Reconciliation Statement applies as proposed by the Generator together with the reasons and information justifying that proposal;
- (ii) a confirmation or an adjustment of all the relevant data set out in the Daily Confirmation Statements which are necessary for the preparation of the Settlement Confirmation Statement in respect of any day associated with the period defined in paragraph (i) above for which the Daily Confirmation Statement has already been submitted by one Party to the other Party; and
- (iii) a confirmation or an adjustment of all the relevant data set out in the Settlement Confirmation Statement already submitted by one Party to the other Party in respect of each month which includes part or all of the period defined in paragraph (i) above;

as further provided in Paragraph 2.3 of Part III of Schedule 14.

- (c) The Generator shall submit such Meter Reconciliation Statement in the format set out in Schedule 28 to EGAT.

2.7.7 (a) Each Metering Equipment, including the test switch used for Accuracy Tests and the cables in the junction box associated with the relevant energy meter, shall be sealed and the seal shall be broken when required, in either case only in the presence of personnel from both EGAT and the Generator. For the avoidance of doubt, any injection connection for accuracy check shall also be sealed. At all relevant locations sealing shall comprise both EGAT's seal and the Generator's seal.

- (b) In the event that the seal of any energy meter is broken for the purpose of inspection and Accuracy Tests in accordance with Sections 2.7.3(a) and 2.7.3(c), such energy meter shall be resealed in accordance with Section 2.7.7(a) after it is inspected and tested (and, if necessary, repaired or replaced, as applicable).

- (c) In the event that the seal of any energy meter is found to have been broken otherwise than in the presence of personnel from both EGAT and the Generator, then such energy meter shall as soon as practicable be tested (and, if necessary, repaired or replaced, as applicable), and thereafter resealed in accordance with Section 2.7.7(a).

- (d) In the event that the seal of any energy meter is found to be

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broken otherwise than in the presence of personnel from both EGAT and the Generator, the Parties shall discuss and decide whether or not the Meter Readings in respect of such energy meter during the relevant period for which the seal is likely to have been broken shall be checked retrospectively.

- (e) The Party responsible for the relevant energy meter shall bear the cost for such test, repair and reseal.

## 2.8 SCADA and Communication System

2.8.1 For the purposes of: (i) the collection, processing and dissemination of data taken by the Metering Equipment and remote indications and data to be provided hereunder; and (ii) the receiving and transmitting of instructions, notifications and reports in accordance with this Agreement and the Grid Code:

- (a) the Generator shall, at its own expense and in accordance with the requirements set forth in Part I of Schedule 15, procure the design, supply, installation and Commissioning Testing of a supervisory control and data acquisition system located in the Lao PDR (the “**Generator SCADA System**”);
- (b) EGAT shall, at its own expense, prepare a database in respect of its existing supervisory control and data acquisition system (the “**EGAT SCADA System**”);
- (c) the Parties shall procure that the data exchange between (1) the Generator SCADA System; and (2) the NCC, BCC and the RCC, is achieved and satisfies such requirements set forth in Part I of Schedule 15 and this Section 2.8.1; and
- (d) the Parties shall procure the design, supply, installation and Commissioning Testing of a communication system (the “**Communication System**”) in accordance with Part II of Schedule 15, including in particular Paragraph 4(a) thereof.

The Generator SCADA System, the EGAT SCADA System and the Communication System together shall compose the “**SCADA and Communication System**”.

### 2.8.2 Preparation in respect of Data Exchange

In connection with Sections 2.8.1(a), 2.8.1(b) and 2.8.1(c), the Parties shall consult and collaborate to define the parameters used for the data exchanges between the EGAT Control Centers and the Generator SCADA System.

### 2.8.3 Procurement of the Communication System

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The Communication System shall comprise the following portions:

- (A) the “**EGAT Communication System**”, being the portion of the Communication System located in Thailand; and
- (B) the “**Generator Communication System**”, being the portion of the Communication System located in the Lao PDR.

Subject to Section 2.6.2 (c), EGAT and the Generator shall each procure, install and commission, or cause to be procured, installed and commissioned, at its own cost and expense the EGAT Communication System and the Generator Communication System, respectively. In connection therewith:

- (a) Commencing on a date that is no later than twenty-four (24) Full Calendar Months prior to the Scheduled Connection Date, the Parties shall consult and collaborate in the preparation of:
  - (i) all technical specifications for the procurement of such portions of the EGAT Communication System and the Generator Communication System that are identified as the “**Relevant Portion**” in Table 15.2.1 of Schedule 15;
  - (ii) the specific method to connect the optical fiber cables comprised in the EGAT Communication System and the Generator Communication System;
  - (iii) the installation plan of the Communication System as a whole; and
  - (iv) the relevant Commissioning Procedures (including all relevant conditions related to the acceptance thereof).

Such technical specifications for the procurement of the Relevant Portion referred to in Section 2.8.3(a)(i) shall be finalized no later than twenty-one (21) Full Calendar Months prior to the Scheduled Connection Date.

- (b) EGAT shall carry out the bidding of the EGAT Communication System, with bidding documents consistent with the main technical specification referred to in Section 2.8.3(a)(i). EGAT shall complete and notify the Generator in writing of its selection of the winning bid, particularly such relevant information associated with the procurement requirement in respect of the Relevant Portion, by a date that is no later than fifteen (15) Full Calendar Months prior to the Scheduled Connection Date.

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- (c) The Parties shall coordinate with each other on the Commissioning Testing of the Communication System as a whole, which shall be conducted jointly by EGAT and the Generator.

2.8.4 EGAT and the Generator shall operate the respective portions of the SCADA and Communication System in accordance with Prudent Utility Practice, the Grid Code and this Agreement. The operation, maintenance and repair of the EGAT SCADA System and the EGAT Communication System shall be conducted by EGAT at its own cost and expense; the operation, maintenance and repair of the Generator SCADA System and the Generator Communication System shall be conducted by the Generator at its own cost and expense.

## 2.9 Protective System

2.9.1 In respect of the protection of the Transmission Line, EGAT shall procure, install and maintain in the EGAT System the protective relays and associated equipment (the “**EGAT Protective System**”).

In respect of the protection of the Transmission Line, the Generator shall procure, install and maintain in the Generator Systems protective relays and associated equipment (the “**Generator Protective System**”).

The EGAT Protective System and the Generator Protective System together shall compose the “**Protective System**”.

The principles and criteria for such EGAT Protective System and Generator Protective System are provided in Schedule 16 (including in particular Paragraph 3 thereof) and the Grid Code.

2.9.2 EGAT shall carry out the bidding of EGAT Protective System, with bidding documents consistent with the requirements provided in Schedule 16. EGAT shall complete and notify the Generator in writing of its selection of the winning bid, particularly such relevant information associated with the procurement of the Generator Protective System as required by Schedule 16, by a date that is no later than eighteen (18) Full Calendar Months prior to the Scheduled Connection Date.

## 2.10 Commissioning Testing prior to the Commercial Operation Date

The requirements relating to Commissioning and testing that both Parties shall comply with are set forth in this Section 2.10 and the applicable provisions of the Grid Code.

### 2.10.1 Subsystems and Commissioning Phases

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(a) EGAT Subsystems

In respect of the Commissioning Testing of the facilities, equipment or systems for which EGAT is responsible to construct, install and Commission in accordance with this Agreement, as applicable, such facilities, equipment or systems are divided into the following subsystems (each of which being an “EGAT Subsystem”):

- (i) the EGAT Interconnection Facilities;
- (ii) the EGAT Transmission Line;
- (iii) the Loei 2 Substation;
- (iv) the Loei 2 Metering System;
- (v) the EGAT SCADA System;
- (vi) the EGAT Communication System; and
- (vii) the EGAT Protective System.

(b) Generator Subsystems

In respect of the Commissioning Testing of the facilities, equipment or systems for which the Generator is responsible to construct, install and Commission in accordance with this Agreement, such facilities, equipment or systems are divided into the following subsystems (each of which being a “Generator Subsystem”):

- (i) the Generator Interconnection Facilities;
- (ii) the Common Interconnection Facilities;
- (iii) the Generator Transmission Line;
- (iv) the Xayaburi Switchyard;
- (v) the Generator Metering System;
- (vi) the Generator SCADA System;
- (vii) the Generator Communication System;
- (viii) the Generator Protective System;

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- (ix) the First Generating Unit (including the Water Measuring System);
- (x) the Second Generating Unit;
- (xi) the Third Generating Unit
- (xii) the Fourth Generating Unit;
- (xiii) the Fifth Generating Unit;
- (xiv) the Sixth Generating Unit;
- (xv) the Seventh Generating Unit; and
- (xvi) the Generator Subsystems in paragraphs (i) to (xv) operating jointly as a whole.

The identification of each of the seven (7) Generating Units as Generator Subsystems (ix) to (xv) shall occur upon the respective Acceptance Date of the Certificate of Readiness for Energization of the respective Generating Unit. The order among the seven (7) Generating Units resulting from such identification shall be fixed for the purposes of the calculation of liquidated damages and Force Majeure Offset Amounts, which may be different from any other orders established for other purposes either prior to or after the respective Acceptance Date referred to herein, such as to address any construction, Commissioning Testing or operational issues.

(c) Classification of Commissioning Testing

The Commissioning Testing of a Subsystem may be classified according to the requirements to connect the relevant Generator Subsystem with the EGAT System and to transmit electrical energy between the Facility and the EGAT System in order to conduct the respective Commissioning Testing as follows:

(i) Pre-Connection Commissioning

“**Pre-Connection Commissioning**” is defined as the Commissioning Testing that could be independently conducted by the Generator or, as the case may be, EGAT without the connection of the relevant Generator Subsystem with the EGAT System.

(ii) Pre-Energization Commissioning

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**“Pre-Energization Commissioning”** is defined as the Commissioning Testing jointly conducted by EGAT and the Generator that requires the connection of the relevant Generator Subsystem with the EGAT System.

(iii) Post Energization Commissioning

**“Post-Energization Commissioning”** is defined as the Commissioning Testing that could be carried out only during the Post-Energization Commissioning Phase.

Schedule 17 provides the list of tests that are required to be successfully performed for the issuance and acceptance of the respective Certificate for such Subsystem and Commissioning Phase.

(d) Commissioning Phases

The period during which Commissioning Testing of the EGAT Subsystems and the Generator Subsystems is performed shall be divided into the following phases (each of which being a **“Commissioning Phase”**):

- (i) the **“Pre-Connection Commissioning Phase”**, being defined as the period starting from (and including) the earliest of the dates of notification by the relevant Party pursuant to Sections 2.10.1(e)(i) or 2.10.1(e)(ii) of the completion of the construction and installation of any such Subsystem until (but excluding) the Connection Date;
- (ii) the **“Pre-Energization Commissioning Phase”**, being defined as the period starting from (and including) the Connection Date until (but excluding) the Energization Date; and
- (iii) the **“Post-Energization Commissioning Phase”**, being defined as the period starting from (and including) the Energization Date until (but excluding) the Commercial Operation Date.

The Commissioning Testing that is to occur in a given Commissioning Phase may involve all Subsystems or only some Subsystems, the details of which are provided in Schedule 17.

(e) Commencement of the Pre-Connection Commissioning Phase

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- (i) EGAT shall notify the Generator of the completion of the construction and installation of each EGAT Subsystem as soon as reasonably practicable thereafter.
- (ii) The Generator shall notify EGAT of the completion of the construction and installation of each Generator Subsystem as soon as reasonably practicable thereafter.
- (iii) For the purpose of witnessing any Pre-Connection Commissioning of any Subsystem, the Party that is responsible for such Subsystem shall notify the other Party of the schedule of such Pre-Connection Commissioning as soon as reasonably practicable, and in any event at least five (5) Business Days prior to the date on which such Pre-Connection Commissioning starts. If the other Party fails to attend the witnessing of the Pre-Connection Commissioning after receiving such advance notice, the Party giving such notice may perform such Pre-Connection Commissioning in the absence of the other Party and shall inform the other Party of the results of such Pre-Connection Commissioning (which results shall be binding on and accepted as accurate by both Parties).

#### 2.10.2 Commissioning Procedures

(a) Acceptance Tests, Information Tests and Completion Tests

The Parties agree that any test conducted for the purpose of Commissioning Testing shall be classified to be either:

- (i) an “**Acceptance Test**”, being defined as part of the Commissioning Testing of the relevant Subsystem conducted during a Commissioning Phase in order to determine if the Certificate of Readiness for Connection, the Certificate of Readiness for Energization or the Certificate of Readiness for Operation, respectively, of that Subsystem can be issued and accepted in accordance with the acceptance criteria specified in such Acceptance Test; or
- (ii) an “**Information Test**”, being defined as part of the Commissioning Testing of the relevant Subsystem of a given Party for which the other Party may witness the performance thereof and provide any comments which it may have to the first Party. The results of any one Information Test shall not in and of itself constitute a basis for refusing the acceptance of the Certificate of Readiness for Connection, the Certificate of Readiness

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for Energization or the Certificate of Readiness for Operation for the relevant Subsystem, unless the results of such Information Test (either singly or collectively with other Information Tests) indicate that there is defect and/or deficiency in such Subsystem that would adversely affect the ability of the Party to perform its obligations in accordance with this Agreement; or

- (iii) a “**Completion Test**”, being defined as part of the Commissioning Testing in respect of a given Subsystem that comprises such activities associated with the Commissioning Testing for which the Party that is responsible therefor shall provide documentary evidence of the execution of such test and its results. The non-responsible Party may provide any comments which it may have to the responsible Party based on the documentary evidence submitted by such responsible Party. Other than in respect of the Commissioning Testing for any Commissioning Phase of a particular Subsystem as provided in Part II of Schedule 17 that comprises solely Completion Test, the results of any Completion Test shall not in and of itself constitute a basis for refusing the acceptance of the Certificate of Readiness for Connection, the Certificate of Readiness for Energization or the Certificate of Readiness for Operation for the relevant Subsystem, unless there is reasonable evidence indicating that either:
- (1) such documentary evidence is either invalid or not applicable for the relevant Subsystem that has been actually delivered and installed; or
  - (2) the actual design, characteristics or features of such relevant Subsystem is inconsistent with any of the responsible Party’s obligations in accordance with this Agreement.

For the avoidance of doubt, granting of a Party’s acceptance to the relevant Certificate in respect of any of the other Party’s Subsystems as provided in Section 2.10.4 shall be based on the results of the Acceptance Tests, the Information Tests and the Completion Tests of such Subsystem, as applicable, for the relevant Commissioning Phase in accordance with Sections 2.10.2(a)(i), 2.10.2(a)(ii) and 2.10.2(a)(iii) above.

- (b) In respect of the EGAT Subsystems (i) to (iv) or the Generator Subsystems (i) to (v)

- (i) EGAT (in respect of an EGAT Subsystem referred to in

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Section 2.10.1(a)(i) to (iv)) or the Generator (in respect of a Generator Subsystem referred to in Section 2.10.1(b)(i) to (v)) (the “**Preparing Party**”) shall, no later than seven (7) Full Calendar Months prior to the Scheduled Connection Date, submit to the other Party a proposed draft of Commissioning Procedures prepared in accordance with Prudent Utility Practice (the “**Proposed Commissioning Procedures**”) for such Subsystem in respect of the Acceptance Tests, Information Tests and Completion Tests identified in Part II and any other test referred to in Paragraph 7 of Part I of Schedule 17 to determine that each such Subsystem is able to operate and function for the purposes contemplated by this Agreement.

- (ii) The other Party shall within thirty (30) days following the delivery by the Preparing Party of such Proposed Commissioning Procedures pursuant to Section 2.10.2(b)(i) above either:
- (1) confirm by notice in writing its agreement with the Proposed Commissioning Procedures (together with the expected conditions of the EGAT System to carry out the tests in the case of the Proposed Commissioning Procedures prepared by the Generator) and the Proposed Commissioning Procedures shall become the Commissioning Procedures for the respective Subsystem; or
  - (2) notify the Preparing Party of any reasonable variations to such Proposed Commissioning Procedures (including a demonstration that such variations are necessary to ensure consistency with Parts I to IV of Schedule 17 and/or to prevent adverse impact on the EGAT System or the Generator System, as the case may be) or of any further information required by such other Party in respect of the Proposed Commissioning Procedures.

In the event the other Party neither so confirms nor so notifies the Preparing Party within the said thirty (30)-day period, the other Party shall be deemed to have agreed to such Proposed Commissioning Procedures, which shall become the Commissioning Procedures for the respective Subsystem.

- (iii) The Preparing Party shall within thirty (30) days

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following the delivery by the other Party of its notification pursuant to Section 2.10.2(b)(ii)(2) above revise and submit to the other Party the revised draft of the Proposed Commissioning Procedures (the “**Revised Commissioning Procedures**”) to take into account: (i) to the extent agreed to by the Preparing Party, any reasonable variations thereto so requested by the other Party; and (ii) any other information so provided by the other Party. If requested by the Preparing Party on reasonable notice, the other Party shall meet with the Preparing Party to discuss the revisions to the Proposed Commissioning Procedures for the purpose of issuing the Revised Commissioning Procedures.

- (iv) The other Party shall within thirty (30) days following the delivery by the Preparing Party of any Revised Commissioning Procedures pursuant to Section 2.10.2(b)(iii) above either:
- (1) confirm by notice in writing its agreement with the Revised Commissioning Procedures (together with the expected conditions of the EGAT System to carry out the tests in the case of the Revised Commissioning Procedures prepared by the Generator) and the Revised Commissioning Procedures shall become the Commissioning Procedures for the respective Subsystem; or
  - (2) notify the Preparing Party of any reasonable variations to such Revised Commissioning Procedures (including a demonstration that such variations are necessary to ensure consistency with Parts I to IV of Schedule 17 and/or to prevent adverse impact on the EGAT System or the Generator System, as the case may be).

In the event the other Party neither so confirms nor so notifies the Preparing Party within the said thirty (30)-day period, the other Party shall be deemed to have agreed to the Revised Commissioning Procedures, which shall become the Commissioning Procedures for the respective Subsystem.

- (v) If the other Party notifies the Preparing Party under Section 2.10.2(b)(iv) above of any variations to the Revised Commissioning Procedures and demonstrates the reasons therefor, then any such variations shall be discussed and agreed between the Parties within a further thirty (30) days following the expiry of the

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period specified in Section 2.10.2(b)(iv) or, in the event that the Parties are unable to agree to such matters within such period, then such matters shall be referred to the arbitration tribunal for decision pursuant to the provisions of Section 13.2.

- (c) In respect of the EGAT Subsystems (v), (vi) and (vii) or the Generator Subsystems (vi), (vii) and (viii)
- (i) The Generator shall, no later than the date that is six (6) Full Calendar Months prior to the Scheduled Connection Date in respect of: (1) the EGAT SCADA System and the Generator SCADA System; (2) the EGAT Communication System and the Generator Communication System; and (3) the EGAT Protective System and the Generator Protective System, submit to EGAT the Proposed Commissioning Procedures for each such group of Subsystems in respect of the Acceptance Tests, Information Tests and Completion Tests identified in Part II and any other test referred to in Paragraph 7 of Part I of Schedule 17 to determine that each such group of Subsystems is able to operate and function for the purposes contemplated by this Agreement.
- (ii) EGAT shall within thirty (30) days following the delivery by the Generator of such Proposed Commissioning Procedures pursuant to Section 2.10.2(c)(i) above either:
- (1) provide the input requested by the Generator in such Proposed Commissioning Procedures; or
- (2) notify the Generator of any reasonable variations to such Proposed Commissioning Procedures or of any further information required by EGAT in respect of the Proposed Commissioning Procedures.
- (iii) The Generator shall within thirty (30) days following the delivery by EGAT of its input pursuant to Section 2.10.2(c)(ii) above revise and submit to EGAT the Revised Commissioning Procedures to take into account: (1) the input provided by EGAT further to the Generator's request; (2) to the extent agreed to by the Generator, any reasonable variations thereto so requested by EGAT; and (3) any other information so provided by EGAT. If requested by the Generator on reasonable notice, EGAT shall meet with the Generator to discuss the revisions to the Proposed Commissioning

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Procedures for the purpose of issuing the Revised Commissioning Procedures.

- (iv) EGAT shall within thirty (30) days following the delivery by the Generator of any Revised Commissioning Procedures pursuant to Section 2.10.2(c)(iii) above either:
- (1) confirm by notice in writing its agreement with the Revised Commissioning Procedures together with the expected conditions of the EGAT System to carry out the tests and the Revised Commissioning Procedures shall become the Commissioning Procedures for the respective Subsystem; or
  - (2) notify the Generator of any reasonable variations to such Revised Commissioning Procedures (including a demonstration that such variations are necessary to ensure consistency with Parts I to IV of Schedule 17 or to prevent adverse impact on the EGAT System).

In the event EGAT neither so confirms nor so notifies the Generator within the said thirty (30)-day period, EGAT shall be deemed to have agreed to the Revised Commissioning Procedures, which shall become the Commissioning Procedures for the respective Subsystem.

- (v) If EGAT notifies the Generator under Section 2.10.2(c)(iv) above of any variations to the Revised Commissioning Procedures and demonstrates the reasons therefor, then any such variations shall be discussed and agreed between the Parties within a further thirty (30) days following the expiry of the period specified in Section 2.10.2(c)(iv) or, in the event that the Parties are unable to agree to such matters within such period, then such matters shall be referred to the arbitration tribunal for decision pursuant to the provisions of Section 13.2.
- (d) In respect of Generator Subsystems (ix), (x), (xi), (xii), (xiii), (xiv), (xv) and (xvi)
- (i) The Generator shall, no later than seven (7) Full Calendar Months prior to the Scheduled Connection Date, submit to EGAT the Proposed Commissioning Procedures for the Generator Subsystems (ix), (x), (xi), (xii), (xiii), (xiv), (xv) and (xvi) in respect of the

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Acceptance Tests, Information Tests and Completion Test, as identified in Part II and any other test referred to in Paragraph 7 of Part I of Schedule 17, together with the expected conditions of the EGAT System for performing such tests, as applicable, to determine that each such relevant Generator Subsystem is able to operate and function for the purposes contemplated by this Agreement.

- (ii) EGAT shall within thirty (30) days following the delivery by the Generator of such Proposed Commissioning Procedures pursuant to Section 2.10.2(d)(i) above either:
- (1) confirm by notice in writing its agreement with the Proposed Commissioning Procedures together with the expected conditions of the EGAT System to carry out the tests and the Proposed Commissioning Procedures shall become the Commissioning Procedures for the respective Subsystem; or
  - (2) notify the Generator of any reasonable variations to such Proposed Commissioning Procedures (including a demonstration that such variations are necessary to ensure consistency with Parts I to IV of Schedule 17 and/or to prevent adverse impact on the EGAT System) or of any further information required by EGAT in respect of the Proposed Commissioning Procedures.

In the event EGAT neither so confirms nor so notifies the Generator within the said thirty (30)-day period, EGAT shall be deemed to have agreed to the Proposed Commissioning Procedures by the Generator, which shall become the Commissioning Procedures for the respective Subsystem.

- (iii) If EGAT notifies the Generator under Section 2.10.2(d)(ii)(2) above of any variations to the Proposed Commissioning Procedures and demonstrates the reasons therefor or of any further information required by EGAT in respect of such Proposed Commissioning Procedures (which information shall be provided as soon as reasonably practicable by the Generator), then any such variations or any other variations or alternative procedures reasonably proposed by EGAT pursuant to any further information submitted by the Generator at EGAT's request shall be discussed and agreed between the

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Parties within a further thirty (30) days following the expiry of the period specified in Section 2.10.2(d)(ii) or, in the event that the Parties are unable to agree such matters within such period, then such matters shall be referred to the arbitration tribunal for decision pursuant to the provisions of Section 13.2.

2.10.3 Scheduling and Coordination for Commissioning Testing of Generator Subsystems

- (a) For the purposes of enabling the Generator to prepare a tentative general program pursuant to Section 2.10.3(b)(i) (I), EGAT shall submit to the Generator a tentative general program for the Commissioning Testing of all the EGAT Subsystems, by five (5) Full Calendar Months prior to the Scheduled Connection Date.
- (b) For the purposes of scheduling and coordinating the Commissioning Testing of the Generator Subsystems, the Parties shall prepare, submit and review the programs therefor as follows:
- (i) (I) No later than three (3) Full Calendar Months prior to the Scheduled Connection Date, the Generator shall submit to EGAT a tentative general program for the Commissioning Testing of all the Generator Subsystems and all the EGAT Subsystems (by incorporating the general program submitted by EGAT pursuant to Section 2.10.3(a)).
- (II) EGAT shall review the general program and shall inform the Generator, within thirty (30) days after delivery thereof to EGAT, of:
- (1) the type of tests which EGAT has or might have problems in scheduling in accordance with the general program due to conditions prevailing on the EGAT System (including any operational problems) at the time proposed by the Generator and the nature and consequence of such tests, and the alternative scheduling therefor;
- (2) the expected conditions of the EGAT System for performing any such tests set out in the general program;

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- (3) details relating to the low demand periods and the high demand periods occurring during the entire period associated with the Commissioning Testing;
- (4) the particular Information Tests which EGAT intends to witness; and
- (5) any other comments which EGAT may have;
- (ii) (I) In respect of each month comprised in the period starting from the month immediately following the month of submission of the general program provided in Section 2.10.3(b)(i)(I) until the completion of the Commissioning Testing, no later than ten (10) days prior to the commencement of such month, the Generator shall submit to EGAT a tentative monthly program for the Commissioning Testing of the relevant Generator Subsystems and the relevant EGAT Subsystems (by incorporating the general program submitted by EGAT pursuant to Section 2.10.3(a)) in that month. The Generator shall incorporate EGAT's response to the general program in preparing the monthly programs.
- (II) EGAT shall review each monthly program and shall inform the Generator, within five (5) Business Days after delivery thereof to EGAT, of:
- (1) the type of tests which EGAT has or might have problems in scheduling in accordance with the monthly program due to conditions prevailing on the EGAT System (including any operational problems) at the time proposed by the Generator and the nature and consequence of such tests and the alternative scheduling therefor;
- (2) the expected conditions of the EGAT System for performing the tests set out in the monthly program;

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- (3) details relating to the low demand periods and the high demand periods occurring during that month;
- (4) the particular Information Tests which EGAT intends to witness; and
- (5) any other comments which EGAT may have;
- (iii) (I) No later than 10 a.m. of Wednesday of the immediately preceding week of a given week starting from three (3) weeks prior to the commencement of the first in time Pre-Connection Commissioning of the relevant Generator Subsystem until the completion of the Commissioning Testing, the Generator shall submit to EGAT a tentative weekly program for the Commissioning Testing of the relevant Generator Subsystems and the relevant EGAT Subsystems in that given week. The Generator shall incorporate EGAT's response to the monthly program for the month in which the relevant week falls in preparing the tentative weekly program and shall identify in the tentative weekly program the Acceptance Tests, the Information Tests and the Completion Tests scheduled to be performed during that week.
- (II) EGAT shall review the tentative weekly program and shall provide the Generator by Friday of such immediately preceding week of:
- (1) the type of tests which EGAT has or might have problems in scheduling in accordance with the tentative weekly program submitted by the Generator due to conditions prevailing on the EGAT System (including any operational problems) at the time proposed by the Generator and the nature and consequence of such tests;
- (2) a revised scheduling (the “**Revised Weekly Commissioning Program**”) for performing the Commissioning Testing of the relevant Generator Subsystems and the relevant EGAT Subsystems in that week;

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- (3) the particular Information Tests which EGAT intends to witness; and
- (4) any other comments which EGAT may have.

Subject to Sections 2.10.4(f)(ii), 2.10.4(g)(ii) and 2.10.4(g)(iii):

- (A) EGAT shall use its best efforts in accordance with Prudent Utility Practice to include in the Revised Weekly Commissioning Program all the tests contained in the tentative weekly program submitted by the Generator to occur within that given week; and
  - (B) in case EGAT has difficulties to include a given test contained in the tentative weekly program submitted by the Generator in the Revised Weekly Commissioning Program to occur within that given week, then EGAT shall include that test in the Revised Weekly Commissioning Program for the immediately subsequent week.
- (iv) No later than 10 a.m. of the immediately preceding Business Day of a given day starting from the commencement of the first in time Pre-Connection Commissioning of the relevant Generator Subsystem until the completion of the Commissioning Testing, the Generator shall submit to EGAT a daily program for the Commissioning Testing of the relevant Generator Subsystems and the relevant EGAT Subsystems (the “**Daily Commissioning Program**”) which shall provide the schedules of the Acceptance Tests, the Information Tests and the Completion Tests to be conducted on that given day. The Generator shall use its best efforts in accordance with Prudent Utility Practice to schedule such Daily Commissioning Program in accordance with the Revised Weekly Commissioning Program referred to in Section 2.10.3(b)(iii)(II)(2) and to be ready for Commissioning Testing in accordance with such Daily Commissioning Program.
- (c) EGAT shall use its best efforts in accordance with Prudent Utility Practice not to postpone any Acceptance Tests, Information Tests

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and Completion Tests scheduled in the Daily Commissioning Program submitted by the Generator to EGAT in accordance with Section 2.10.3(b)(iv), provided that such Daily Commissioning Program is prepared in accordance with the Revised Weekly Commissioning Program referred to in Section 2.10.3(b)(iii)(II)(2).

- (d) The Parties agree that:
- (i) “low demand period” is defined to mean any SE Period or any part thereof or such other meaning as the Parties may from time to time agree;
  - (ii) “high demand period” is defined to mean any PE Period or any part thereof or such other meaning as the Parties may from time to time agree;
  - (iii) full load tests shall not be performed during low demand periods; and
  - (iv) frequency response tests shall not be performed during high demand periods.

2.10.4 Certificate of Readiness for Connection, Certificate of Readiness for Energization and Certificate of Readiness for Operation

- (a) General Principles relating to issuing and acceptance of Certificates
- (i) Without prejudice to the requirements set forth in Section 2.3.1(i), the Party responsible for the Commissioning Testing of a Subsystem shall provide to the other Party the results and supporting evidence thereof in respect of a Commissioning Testing as soon as such results and evidence are available.
  - (ii) Upon meeting all applicable requirements related to the performance of the Commissioning Testing for the respective Commissioning Phase in respect of each Subsystem specifically provided in each Subsection of Section 2.10.4(b), (c), (d), (e), (f) and (g), the Party responsible for such Subsystem shall issue to the other Party therefor a Certificate of Readiness for Connection, a Certificate of Readiness for Energization or a Certificate of Readiness for Operation (each a “**Certificate**”), as the case may be.
  - (iii) Upon delivery of such Certificate by the Party responsible for such Subsystem, the other Party shall,

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within three (3) Business Days after such delivery either:

- (1) issue a written acknowledgement of the Certificate, whereupon the “**Acceptance Date**” shall be deemed to be the date of such written acknowledgement; or
  - (2) issue a written notification to the Party responsible for such Subsystem (the “**Non-Acceptance Notification**”) notifying that such other Party does not agree that the relevant Subsystem meets the applicable requirements, together with evidence supporting such notification.
- (iv) In the event that the other Party issues a Non-Acceptance Notification pursuant to Section 2.10.4(a)(iii)(2), the Parties shall immediately meet to discuss for a period of not more than three (3) Business Days or such other longer period as the Parties may agree.

In the event that the Parties agree that all applicable requirements for the respective Commissioning Phase have been met, the Acceptance Date of the Certificate shall be deemed to be the date immediately following the expiry of such three (3)-Business Day period after the delivery of such Certificate to the other Party.

In the event that the Parties agree that any applicable requirement for the respective Commissioning Phase has not been met, the Certificate shall be deemed not have been issued.

In the event that the Parties do not agree, the dispute shall be referred to the arbitration tribunal for decision pursuant to the provisions of Section 13.2. If the arbitration tribunal decides that all applicable requirements for the respective Commissioning Phase have been met prior to the date of issuance of such Certificate, the Acceptance Date of the Certificate shall be the date falling three (3) Business Days after the delivery of such Certificate to the other Party.

- (v) In the event that the other Party does not issue a written confirmation or a Non-Acceptance Notification within the said three (3)-Business Day period, the other Party shall be deemed to have agreed to and accepted the Certificate and the Acceptance Date thereof shall be

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deemed to be the date immediately following the expiry of such three (3)-Business Day period.

- (vi) In the event that the relevant part of Part II of Schedule 17 specifies the requirements regarding Commissioning Testing in respect of a given Subsystem and a given Commissioning Phase as 'Not applicable', the Certificate corresponding to such Subsystem and such Commissioning Phase shall not be required.
- (b) Certificate of Readiness for Connection in respect of all EGAT Subsystems (i) to (vii) and all Generator Subsystems (i) to (viii)
- (i) Promptly upon the commencement of the Pre-Connection Commissioning Phase, the Parties shall procure that each of the EGAT Subsystems (i) to (vii) and each of the Generator Subsystems (i) to (viii) are tested in accordance with the applicable Commissioning Procedure in respect of the Acceptance Tests, the Information Tests and the Completion Tests, as applicable, that are set out in Part II of Schedule 17 for such Pre-Connection Commissioning Phase.
- (ii) If the relevant Subsystem meets all applicable requirements regarding such relevant Acceptance Tests, Information Tests and Completion Tests, the Party responsible for such Subsystem shall issue to the other Party a Certificate of Readiness for Connection therefor whereupon the acceptance thereof shall be determined in accordance with Section 2.10.4(a).
- (c) Certificate of Readiness for Energization in respect of EGAT Subsystems (ii) to (vii) and the Generator Subsystems (ii) to (viii)
- (i) Promptly upon the commencement of the Pre-Energization Commissioning Phase, the Parties shall procure that each of the EGAT Subsystems referred to in Section 2.10.1(a)(ii) to (vii) and each of the Generator Subsystems referred to in Section 2.10.1(b)(ii) to (viii) are tested in accordance with the applicable Commissioning Procedure in respect of the Acceptance Tests, the Information Tests and the Completion Tests, as applicable, that are set out in Part II of Schedule 17 for such Pre-Energization Commissioning Phase.
- (ii) If the relevant Subsystem meets all applicable requirements regarding such relevant Acceptance Tests,

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Information Tests and Completion Tests, as applicable, the Party responsible for such Subsystem shall issue to the other Party a Certificate of Readiness for Energization therefor whereupon the acceptance thereof shall be determined in accordance with Section 2.10.4(a).

- (d) Certificate of Readiness for Energization in respect of the Generator Subsystems (ix), (x), (xi), (xii), (xiii), (xiv) and (xv)
- (i) Promptly upon the commencement of the Pre-Energization Commissioning Phase, the Generator shall as soon as practicable procure that each Generator Subsystem referred to in Section 2.10.1(b)(ix) to (xv) are tested in accordance with the applicable Commissioning Procedure in respect of the Acceptance Tests, the Information Tests and the Completion Tests, as applicable, that are set out in Part II of Schedule 17 for such Pre-Energization Commissioning Phase.
- (ii) If the relevant Generator Subsystem meets the applicable requirements regarding such relevant Acceptance Tests, Information Tests and Completion Tests, as applicable, the Generator shall issue to EGAT a Certificate of Readiness for Energization therefor whereupon the acceptance thereof shall be determined in accordance with Section 2.10.4(a).
- (e) Certificate of Readiness for Operation in respect of EGAT Subsystems (iii) to (vii) and the Generator Subsystems (iv) to (viii)
- (i) Promptly upon the commencement of the Post-Energization Commissioning Phase, subject to Section 2.10.4(a)(vi), the Parties shall procure that each of the EGAT Subsystems referred to in Section 2.10.1(a)(iii) to (vii) and each of the Generator Subsystems referred to in Section 2.10.1(b)(iv) to (viii) are tested in accordance with the applicable Commissioning Procedure in respect of the Acceptance Tests, the Information Tests and the Completion Tests, as applicable, that are set out in Part II of Schedule 17 for such Post-Energization Commissioning Phase.
- (ii) If the relevant Subsystem meets all applicable requirements regarding such relevant Acceptance Tests, Information Tests and Completion Tests, as applicable, the Party responsible for such Subsystem shall issue to the other Party a Certificate of Readiness for Operation

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therefor whereupon the acceptance thereof shall be determined in accordance with Section 2.10.4(a).

(f) Certificate of Readiness for Operation in respect of the Generator Subsystems (ix), (x), (xi), (xii), (xiii), (xiv) and (xv)

(i) Promptly upon the commencement of the Post-Energization Commissioning Phase, the Generator shall procure that each of the Generator Subsystems (ix), (x), (xi), (xii), (xiii), (xiv) and (xv) are tested in accordance with the applicable Commissioning Procedure in respect of the Acceptance Tests and the Information Tests, that are set out in Part II of Schedule 17 for such Post-Energization Commissioning Phase.

(ii) Unit Trial Run Test

The Unit Trial Run Test for each such Generator Subsystem referred to in paragraph (i) above shall be scheduled as a single test consisting of first, the Continuous Operation Test and second, the Start and Stop Test. The Unit Trial Run Test shall be included in the scheduling programs referred to in Section 2.10.3, provided that in addition thereto the Generator shall also give EGAT no less than seven (7) day's prior written notice of its readiness to commence the Unit Trial Run Test for the relevant Generator Subsystem. If EGAT fails to schedule such Unit Trial Run Test for the relevant Generator Subsystem being tested on a date within seven (7) days after the readiness date set out in such prior notice, such Generator Subsystem shall be deemed to have passed the Unit Trial Run Test on the eighth (8<sup>th</sup>) day following the readiness date set out in such prior notice.

(iii) If the relevant Generator Subsystem meets all applicable requirements regarding such relevant Acceptance Tests and Information Tests, as applicable, and passes or is deemed to have passed the Unit Trial Run Test and provided that the Generator has issued the Provisional Acceptance Certificate (as defined in the EPC Contracts) for the relevant Generating Unit to the EPC Contractors, the Generator shall issue to EGAT a Certificate of Readiness for Operation therefor whereupon the acceptance thereof shall be determined in accordance with Section 2.10.4(a).

For the avoidance of doubt, the Provisional Acceptance Certificate issued in accordance with the EPC Contracts

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for each Generating Unit and any deficiencies and/or reservations therein shall not in and of itself constitute a basis for EGAT to withhold its acknowledgement for such Certificate of Readiness for Operation, unless EGAT demonstrates to the Generator that such deficiencies and/or reservation materially and adversely impact on the ability of the Generator to perform its obligations in accordance with this Agreement and, when connected to the EGAT System, would have a material adverse impact on the safety, security and/or reliability of the EGAT System once interconnected with the Generator System.

(g) Certificate of Readiness for Operation in respect of the Generator Subsystem (xvi)

(i) Subject to Section 2.10.4(a)(vi), following the acceptance of the Certificate of Readiness for Operation for all Generator Subsystems referred to in Sections 2.10.1(b)(iv) to (xv), the Generator shall procure that the Generator Subsystem (xvi) be Commissioned in accordance with the applicable Commissioning Procedure in respect of the Acceptance Tests and the Information Tests, that are set out in Part II of Schedule 17 for such Post-Energization Commissioning Phase.

(ii) Registered Capacity Test

(1) The Registered Capacity Test shall be included in the scheduling programs referred to in Section 2.10.3, provided that EGAT shall include the Registered Capacity Test which has been included in a given tentative weekly program in the relevant Revised Weekly Commissioning Program or the Revised Weekly Commissioning Program of the immediately subsequent week in accordance with Section 2.10.3(b)(iii)(II)(B), failing which the Registered Capacity Test shall be deemed to be met on the last day of the second week following the date of issuance of the Generator's tentative weekly program and the Registered Capacity shall be deemed to be the Contracted Capacity as set out in Table 1.1.1 of Schedule 1.

(2) In the event that the Registered Capacity Test is deemed to be met pursuant to Section 2.10.4(g)(ii)(1) above, EGAT may, after the Commercial Operation Date, request for the

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Registered Capacity Test to be conducted. The Registered Capacity pursuant to such test shall, with effect from the date of such test, be determined as set out in Part IV of Schedule 17. For the avoidance of doubt, until such time as the Registered Capacity Test is conducted, the Registered Capacity shall be deemed to be the corresponding Contracted Capacity as set out in Table 1.1.1 of Schedule 1.

(iii) Global Trial Run Test

The Global Trial Run Test shall be included in the scheduling programs referred to in Section 2.10.3, provided that EGAT shall include the Global Trial Run Test which has been included in a given tentative weekly program in the Revised Weekly Commissioning Program or the Revised Weekly Commissioning Program of the immediately subsequent week in accordance with Section 2.10.3(b)(iii)(II)(B), failing which all the Generator Subsystems shall be deemed to have passed the Global Trial Run Test on the last day of the second week following the date of issuance of the Generator's tentative weekly program.

- (iv) If the Generator Subsystem (xvi) meets all applicable requirements regarding such relevant Acceptance Tests and Information Tests, as applicable, and passes or is deemed to have passed the Global Trial Run Test, the Generator shall issue to EGAT a Certificate of Readiness for Operation therefor whereupon the acceptance thereof shall be determined in accordance with Section 2.10.4(a).

(h) Correction associated with the Commissioning Testing

- (i) In the event that the conduct of the Commissioning Testing (including inspection) evidences that any Subsystem does not meet the applicable criteria of any Acceptance Test, the Party responsible for such Subsystem shall make best efforts to rectify such relevant defect or deficiency, provided that if such failure is a defect or deficiency that involves any Contracted Operating Characteristics or any Generator Stability Data for which Section 9.5.7, Section 9.5.8 and/or Part II of Schedule 1 shall apply, the Generator may elect not to remedy such defect or deficiency.

- (ii) The relevant Subsystem referred to in Section 2.10.4(h)(i) shall, following the carrying out of the

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remedial work, be submitted or re-submitted (as appropriate) for inspection or Commissioning Testing (where appropriate) in accordance with this Section 2.10.

- (iii) In the event that the rectification referred to in Section 2.10.4(h)(i) requires a design modification either in an EGAT Subsystem or a Generator Subsystem in order to comply with the requirements of this Agreement, a design modification report shall be prepared by the Party responsible for such Subsystem. The design modification report shall be reviewed by the other Party within five (5) Business Days after such issuance, provided that such review period shall be extended to a longer duration as the Parties may agree depending on the extent and complexity of such design modification.

(i) Waiver of Commissioning Testing

Notwithstanding: (i) any other provision in this Agreement to the contrary; and (ii) the lists of Acceptance Tests provided in Part II of Schedule 17, either Party shall have the right to waive:

- (1) the performance of any Acceptance Test or any Information Test; or
- (2) any requirement regarding the Acceptance Test,

which, for the avoidance of doubt, such Acceptance Test or Information Test shall not be a Compulsory Test, for the purpose of the issuance of a Certificate associated with a Subsystem responsible by the other Party.

Upon notification by such Party to the other Party of such waiver the corresponding test shall be deemed to have been successfully completed on the date of such notification.

For the avoidance of doubt, where such a waiver pertains to a test within the Post-Energization Commissioning Phase the purpose of which is to establish a Registered Operating Characteristic, EGAT may, after the Commercial Operation Date, request for such test to be conducted. The Registered Operating Characteristic pursuant to such test shall, with effect from the date of such test, be determined as set out in Part IV of Schedule 17. Until such time as the relevant test is conducted, such relevant Registered Operating Characteristic shall be deemed to be the corresponding Contracted Operating Characteristic as set out in Part III of Schedule 1.

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### 2.10.5 Rights to Inspect and Monitor Commissioning Testing of the Other Party

- (a) EGAT shall provide to the Generator, subject to due compliance by the Generator with such reasonable safety and procedural requirements as may be stipulated from time to time by EGAT, access to inspect and monitor the Commissioning Testing of any EGAT Subsystem upon reasonable prior written notice from the Generator to EGAT. The Generator shall bear its own costs and expenses relating to any such inspection and monitoring.

EGAT shall prepare and make ready all necessary documents for the Generator's representative in witnessing the test, including Construction Drawings and single line diagram of the Loei 2 Substation and final settings for the EGAT Protective System.

- (b) The Generator shall provide to EGAT, subject to due compliance by EGAT with such reasonable safety and procedural requirements as may be stipulated from time to time by the Generator, access to inspect and monitor the Commissioning Testing of any Generator Subsystem upon reasonable prior written notice from EGAT to the Generator. EGAT shall bear its own costs and expenses relating to any such witnessing, inspection and monitoring.

The Generator shall prepare and make ready all necessary documents for EGAT's representative in witnessing the test, including Construction Drawings and single line diagram of the main equipment such as generator, transformer, the Xayaburi Switchyard and final settings for the Generator Protective System.

- (c) Each Party shall give the other Party not less than twenty-four (24) hours of its intention to attend any Commissioning Testing. If the first Party does not attend at the agreed time and the relevant place, the other Party may proceed with the relevant Commissioning Testing, and the Commissioning Testing shall then be deemed to have been made in the first Party's presence and the results of such Commissioning Testing shall be binding on and accepted as accurate by both Parties save in the case of fraud, misrepresentation or manifest error.

### 2.10.6 Test Energy Delivered to the EGAT System

- (a) During any Commissioning Testing of any Generating Unit where the operating conditions of such Generating Unit and the operating conditions of any Generating Unit that has then been

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Commissioned are equivalent, EGAT shall Dispatch such Generating Unit being Commissioned in priority to Dispatching such Commissioned Unit.

- (b) Subject to the compliance of the electrical energy supplied by such Generating Unit with the industry standards and practices regarding the performance that could reasonably be achieved by a generating unit during its commissioning, EGAT shall Dispatch in accordance with the relevant Commissioning Procedures and purchase, at the Test Energy Tariff as provided in Section 4.2.1, electrical energy produced by each Generating Unit during its Commissioning Testing, provided that such electrical energy has been supplied in accordance with the relevant Commissioning Procedures.

#### 2.10.7 Energy Supplied by EGAT in respect of Commissioning Testing

EGAT shall provide necessary electrical energy for Commissioning Testing of each Generator Subsystem as required by the relevant Commissioning Procedures and upon the request from the Generator. The Generator shall pay for all Imported Energy provided in accordance with this Section at the rate specified in Section 5.4.

### 2.11 **Testing Post Commercial Operation Date**

#### 2.11.1 Annual Testing

- (a) Commencing on the second Contract Year, the Generator shall, at its own cost and expense, conduct the annual tests (each such annual test being referred to as an “**Annual Testing**”) in accordance with Part VI of Schedule 17 and the Post COD Testing Procedures referred to in Section 2.11.1(b) and at such times provided in the testing schedules determined in accordance with Section 2.11.1(c) in order to determine the then effective Registered Operating Characteristics defined in Part III of Schedule 1. For the avoidance of doubt Design Limits shall not be subject to any Annual Testing or Additional Testing.

#### (b) Post COD Testing Procedures

- (i) The Generator shall, no later than three (3) Full Calendar Months after the Commercial Operation Date, submit to EGAT a draft of detailed annual testing procedures (the “**Proposed Post COD Testing Procedures**”) in respect of the Annual Testing and the Additional Testing, such Proposed Post COD Testing Procedures to be consistent with Parts V and VI of Schedule 17.

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- (ii) EGAT shall within sixty (60) days following the delivery by the Generator of such Proposed Post COD Testing Procedures pursuant to Section 2.11.1(b)(i) above either:
- (1) confirm by notice in writing its agreement with the Proposed Post COD Testing Procedures together with the expected EGAT System conditions to carry out the tests and such Proposed Post COD Testing Procedures shall become the procedures to be used for both Annual Testing and Additional Testing (the **“Post COD Testing Procedures”**); or
  - (2) notify the Generator of any reasonable variations to such Proposed Post COD Testing Procedures (including a demonstration that such variations are necessary to ensure consistency with the Schedule 17 and/or to prevent adverse impact on the EGAT System) or of any further information required by EGAT in respect of the Proposed Post COD Testing Procedures.

In the event EGAT neither so confirms nor so notifies the Generator within the said sixty (60)-day period, EGAT shall be deemed to have agreed to the Proposed Post COD Testing Procedures and such Proposed Post COD Testing Procedures shall become the Post COD Testing Procedures.

- (iii) If EGAT notifies the Generator under Section 2.11.1(b)(ii)(2) above of any variations to the Proposed Post COD Testing Procedures and demonstrates the reasons therefor or of any further information required by EGAT in respect of such Proposed Post COD Testing Procedures (which information shall be provided as soon as reasonably practicable by the Generator), then any such variations or any other variations or alternative procedures reasonably proposed by EGAT pursuant to any further information submitted by the Generator at EGAT’s request shall be discussed and agreed between the Parties within a further sixty (60) days following the expiry of the period specified in Section 2.11.1(b)(ii) or, in the event that the Parties are unable to agree on such matters within such period, then such matters shall be referred to the arbitration tribunal for decision pursuant to the provisions of Section 13.2.

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(c) Scheduling of Annual Testing

(i) The Generator shall submit to EGAT the proposed schedules and plan of the Annual Testing for the Initial First Period, the Initial Second Period, as applicable, and each subsequent Contract Year at the same time as the Generator submits to EGAT the Proposed Initial First Period Planned Outage Program, the Proposed Initial Second Period Planned Outage Program, as applicable, and the Proposed Seven-Year Rolling Program, respectively, all as pursuant to Paragraph 1.1 of Part I of Schedule 3. These proposed schedules for Annual Testing in respect of the respective Initial First Period, Initial Second Period, as applicable, and subsequent Contract Years (the “**Annual Testing Schedules**”) shall be reviewed by EGAT and finalized between the Parties at the same time as both Parties discuss and finalize such relevant Initial First Period Planned Outage Program, Initial Second Period Planned Outage Program, as applicable, and Annual Planned Outage Program, respectively.

(ii) The Parties agree to adopt the following principles in finalizing the Annual Testing Schedules in respect of the respective Initial First Period, Initial Second Period, as applicable, and subsequent Contract Years:

(1) in order to minimize the effects on the Final Declaration for each such relevant period, any tests which affect the operation of any Generating Unit or require such Generating Unit to be shut down in preparation for such tests and/or during the performance of such tests shall be scheduled during the SE Period;

(2) any tests comprised in the Annual Testing for the Initial First Period, the Initial Second Period, as applicable and any given subsequent Contract Year which require any Generating Unit to be Unavailable during any PE Period shall not be scheduled if the aggregate duration that such Generating Unit is Unavailable due to all tests associated therewith exceeds:

(aa) in the case of the Initial First Period or a Contract Year any of which comprising twelve (12) months, sixteen (16) hours; or

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- (bb) in the case of the Initial First Period, the Initial Second Period, as applicable, or a Contract Year any of which comprising less than twelve (12) months, a duration corresponding to such sixteen (16) hours prorated to the actual duration of the Initial First Period, the Initial Second Period, as applicable, or such Contract Year;
- (3) full load tests and frequency response tests shall be performed in accordance with Section 2.10.3(d).
- (iii) In respect of any tests in the Annual Testing which requires the Generator System or any portion thereof to be connected with the EGAT System during the performance of such tests, EGAT shall review the proposed Annual Testing Schedule submitted by the Generator and inform the Generator of:
- (1) the type of tests which EGAT has or might have problems in scheduling due to conditions prevailing on the EGAT System at the proposed time and the nature and consequence of such tests, and the alternative scheduling therefor;
  - (2) the expected EGAT System conditions for performing any such tests; and
  - (3) details relating to the low demand periods and the high demand periods occurring during the Annual Testing period.
- EGAT shall schedule such Annual Testing requested to be performed in a given month no later than five (5) Business Days before the date when the Weekly Declaration is to be issued by the Generator according to Paragraph 1.2 of Part I of Schedule 3 for that month.
- (d) The Generator shall provide to EGAT, subject to due compliance with reasonable safety and procedural requirements stipulated by the Generator, access to witness and monitor such tests. EGAT shall bear its own costs and expenses relating to any such witnessing and monitoring. EGAT shall give the Generator prior notice of its intention to attend any Annual Testing no later than twenty-four (24) hours before the conduct of such Annual Testing. The Generator shall prepare and make

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ready all necessary documents for EGAT's representative in witnessing the test, including As-Built Drawings, single line diagrams and final service setting for the main equipment of the Generator System (generator, transformer and the Generator Protective System).

- (e) If EGAT does not attend at the agreed time and the relevant place, the Generator may proceed with the relevant Annual Testing, and the Annual Testing shall then be deemed to have been made in EGAT's presence and the results of the Annual Testing shall be binding on and accepted as accurate by both Parties save in the case of fraud, misrepresentation or manifest error.

#### 2.11.2 Additional Testing

- (a) Either Party may from time to time after the Commercial Operation Date, at its option, request by giving the other Party a written notice of the conduct of any test in addition to the Annual Testing (each such test being referred to as an “**Additional Testing**”) to determine or verify:
  - (i) any of the Registered Operating Characteristics as defined in Part III of Schedule 1, to be carried out in accordance with Part VI of Schedule 17 and the applicable Post COD Testing Procedures; or
  - (ii) any Generator Stability Data (except Unit inertia) to be carried out in accordance with the applicable Commissioning Procedures referred to in Section 2.10.2.

The Party responsible for all costs and expenses of each Additional Testing shall be determined in accordance with Section 2.11.5.

- (b) The Party requesting the Additional Testing shall specify in its written notice of request:
  - (i) the Registered Operating Characteristics or the Generator Stability Data (other than Unit inertia) to be tested and support its request with documentation which adequately evidences the need to perform such Additional Testing. For the avoidance of doubt, a Party may request the Additional Testing to demonstrate or to verify the results pursuant to the remedy of any Registered Operating Characteristics that was found defective in previous testing; and

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- (ii) the proposed scheduling of such Additional Testing, being a date no earlier than thirty (30) days after the date of the request.
- (c) The Parties shall, upon issuance of a request for Additional Testing, discuss for a period of not more than five (5) days the scheduling of such Additional Testing. The Parties agree that they shall use their best efforts to schedule the Additional Testing during the SE Period. In the event that the Parties are unable to agree on a date, the matter shall be referred to the arbitration tribunal for decision pursuant to the provisions of Section 13.2.
- (d) The Additional Testing referred to in Section 2.11.2(a) shall be carried out, at the request of either Party, not more than two (2) times in any Contract Year (reduced on pro rata basis to the nearest whole number in respect of any Contract Year that is less than twelve (12) full calendar months), provided that either Party may at any time request the testing of the generating capacity of any Generating Unit and the Facility if it provides evidence, including such evidence resulting from on-line monitoring, that either: (1) there has been a deterioration in the generating capacity of the Facility in accordance with Section 9.6.1(a) or a deterioration of any Registered Operating Characteristics in accordance with Section 9.6.7; or (2) there has been an improvement in the generating capacity of the Facility or an improvement in any Registered Operating Characteristics from the value determined by the most recent Annual Testing or Additional Testing (as the case may be). For the avoidance of doubt, the limit regarding the number of Additional Testing referred to in this Section 2.11.2(d) shall not be applicable to such tests that are carried out by On-Line Testing.
- (e) EGAT shall have the right to witness and monitor any tests conducted by the Generator under this Section 2.11.2, subject to compliance with such reasonable safety and procedural requirements as may be stipulated by the Generator. EGAT shall bear its own costs and expenses relating to any such witnessing and monitoring. EGAT shall give the Generator prior notice of its intention to attend any Additional Testing no later than twenty-four (24) hours before the conduct of such Additional Testing. The Generator shall prepare and make ready all necessary documents for EGAT's representative in witnessing the test, including As-Built Drawings, single line diagrams and final service setting for the main equipment of the Generator System (generator, transformer and the Generator Protective System).

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- (f) If EGAT does not attend at the agreed time and the relevant place, the Generator may proceed with the relevant Additional Testing, and the Additional Testing shall then be deemed to have been made in EGAT's presence and the results of the Additional Testing shall be binding on and accepted as accurate by both Parties save in the case of fraud, misrepresentation or manifest error.

### 2.11.3 Test Reports

- (a) The Generator shall, no later than thirty (30) days after the performance of any Annual Testing or Additional Testing, submit to EGAT the test report setting out the results of such test.
- (b) EGAT shall within thirty (30) days following the delivery by the Generator of any test report pursuant to Section 2.11.3(a) above either:
- (i) confirm by notice in writing its agreement with the test report; or
  - (ii) notify the Generator of any disagreement with the test report, setting out the reasons for such disagreement together with documentation which adequately evidences the same.

In the event EGAT neither so confirms nor so notifies the Generator within the said thirty (30)-day period, EGAT shall be deemed to have agreed to the test report submitted by the Generator.

### 2.11.4 Adjustments to Registered Operating Characteristics pursuant to Annual Testing or Additional Testing

Within thirty (30) days after the completion of any Annual Testing or Additional Testing, EGAT and the Generator shall in good faith and using all reasonable endeavors seek to agree to:

- (a) any revision of the Registered Capacity Tables and the Registered XYB Unit Capacity Tables (Tables 1.3.1, 1.3.2, 1.4.1, 1.4.2 and 1.4.3 set out in Part III of Schedule 1, respectively) in order to reflect the results of such Annual Testing or Additional Testing, applying the methodology set out in Part IV of Schedule 17. In the absence of any agreement within such period, such matter shall be referred to the arbitration tribunal for decision in accordance with Section 13.2. The respective Registered Capacity Tables and Registered XYB Unit Capacity Tables shall be deemed for all purposes under this Agreement to be adjusted by any variation

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agreed to between the Parties or decided by arbitration, on the date of such agreement by the Parties or of such decision by the arbitration tribunal, respectively, and the generating capacity in respect of each Generating Unit as so adjusted and reflected in the Registered XYB Unit Capacity Tables shall constitute the corresponding Registered Operating Characteristic until the occurrence of the next adjustment in accordance with this Section 2.11.4; and

- (b) any revision of other Registered Operating Characteristics which are the subject of such Annual Testing or Additional Testing. In the absence of any agreement within such period, such matter shall be referred to the arbitration tribunal for decision in accordance with Section 13.2. The relevant Registered Operating Characteristics shall be deemed for all purposes of this Agreement to be adjusted by any variation agreed to between the Parties or decided by arbitration, on the date of such agreement by the Parties or of such decision by the arbitration tribunal, respectively, and that relevant Registered Operating Characteristics in respect of the respective Generating Unit as so adjusted shall constitute the corresponding Registered Operating Characteristic until the occurrence of the next adjustment in accordance with this Section 2.11.4.

#### 2.11.5 Costs and Expenses of Additional Testing

- (a) If any Additional Testing is conducted in accordance with Section 2.11.2 in respect of any of the Registered Operating Characteristics other than generating capacity at a request made by EGAT, EGAT shall bear all costs and expenses relating to such Additional Testing if such Additional Testing establishes that the achievable value of such Registered Operating Characteristics resulting from the test is no worse than the value which shall be the latest of:
- (i) the Registered Operating Characteristics as determined by the Annual Testing pursuant to Section 2.11.1;
  - (ii) the Registered Operating Characteristics as determined by the Additional Testing pursuant to Section 2.11.2; and
  - (iii) the Declared Operating Characteristics.

Otherwise the costs and expenses relating to such Additional Testing shall be borne by the Generator.

- (b) If any Additional Testing is conducted in accordance with

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Section 2.11.2 in respect of generating capacity at a request made by EGAT, EGAT shall bear all costs and expenses relating to such Additional Testing if such Additional Testing establishes that there has been no diminution of generating capacity from the value determined by the Annual Testing under Section 2.11.1 or the Additional Testing under Section 2.11.2 (whichever value shall be the later).

Otherwise the costs and expenses relating to such Additional Testing shall be borne by the Generator.

- (c) Where the Generator is liable for the costs and expenses of the relevant Additional Testing, any interruption or diminution of the Availability arising during the period of such Additional Testing shall be deemed to be a Generator Maintenance Outage in the ordinary course for all purposes under this Agreement.
- (d) Where EGAT is liable for the costs and expenses of the relevant Additional Testing, any interruption or diminution of the Availability arising during the period of such Additional Testing shall not be accounted as Unavailability for the purpose of the determination of Final Declaration as provided in Schedule 3.

#### 2.11.6 Test Energy in respect of Tests Conducted other than by On-Line Testing

Where any Annual Testing or Additional Testing is conducted other than by way of On-Line Testing under the terms of this Agreement, EGAT shall Dispatch and purchase, at the Test Energy Tariff as provided in Section 4.3(f), electrical energy produced by each Generating Unit during such Annual Testing or Additional Testing, subject to such electrical energy being supplied in accordance with the relevant Post COD Testing Procedures referred to in Section 2.11.1(b).

### **2.12 Repair and Maintenance Costs**

The costs arising from the carrying out of repairs or maintenance of the EGAT System (or any part thereof) shall be borne by EGAT and the costs arising from the carrying out of repairs or maintenance to the Generator System (or any part thereof) shall be borne by the Generator except:

- (a) if any such repair or maintenance in respect of the EGAT Transmission Facilities shall be solely attributable to any fault or defect of the Generator System or any default or negligence of the Generator, all such costs shall be borne by the Generator; and
- (b) if any such repair or maintenance in respect of the Generator Transmission Facilities shall be solely attributable to any fault or

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defect of the EGAT System or any default or negligence of EGAT, all such costs shall be borne by EGAT;

and each Party shall pay such costs for which it is responsible within thirty (30) days after receipt of a Payment Invoice from the other Party requiring payment and giving reasonable details of:

- (i) the repair or maintenance and the costs related thereto; and
- (ii) the alleged fault, defect, default or negligence.

## **2.13 Coordinated Development and Construction of the EGAT Transmission Facilities and the Generator System**

### **2.13.1 Delayed Effectiveness of EGAT's Obligations related to the EGAT Transmission Facilities**

Notwithstanding any provision to the contrary in this Agreement, EGAT shall not be obligated to commence procurement of any components, equipment or facilities thereof, construction and installation of the EGAT Transmission Facilities, or to commence making any expenditures thereon or related thereto, and all obligations of EGAT related thereto, other than as set forth in Sections 1.5 and 2.2 of this Agreement, shall not become effective until the EGAT Construction Obligation Commencement Date.

### **2.13.2 Obligations to Meet, Notify and Inform**

- (a) Upon reasonable prior written notice, the Generator shall meet with EGAT and shall provide such information as may be reasonably requested in writing by EGAT regarding the status of the development, construction, operation and maintenance of the Generator System. If, at any time prior to the Commercial Operation Date, the Generator becomes aware of any problem, difficulty or other event or circumstance which might reasonably be expected to threaten materially the commercial, financial or legal viability of the development, construction or operation of the Generator System or the achievement of the Commercial Operation Date thereof in accordance with the terms of this Agreement (including any suspension of or restriction on the funding capability of the Generator or any material limitations on the authority of the Lenders to release funding to the Generator or on the capability of the Generator to draw down funding under the Financing Documents) or obtains written notice from the Lenders or the Security Agent of any such concerns or of a potential material breach by the Generator of one or more of the Financing Documents or Project Agreements on the part of one or more of the Lenders or its contractors thereunder, respectively, the

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Generator shall immediately notify EGAT in writing of such problem, difficulty, event, circumstance and/or written notice and furnish as soon as possible thereafter to EGAT in writing with full particulars of any such problem, difficulty, event or other circumstance.

- (b) Upon reasonable prior written notice, EGAT shall meet with the Generator and representatives of Lenders designated by the Generator and shall provide such information as may be reasonably requested in writing by the Generator on its own behalf and on behalf of the Lenders regarding the status of the acquisition of the EGAT Access Rights and construction and installation of the EGAT Transmission Facilities. If, at any time prior to the Commercial Operation Date, EGAT becomes aware of any problem, difficulty or other event or circumstance which might reasonably be expected to threaten materially the acquisition of the EGAT Access Rights or the construction, installation and Commissioning Testing of the EGAT Transmission Facilities or the achievement of the Commercial Operation Date, EGAT shall immediately furnish the Generator in writing with full particulars of any such problem, difficulty, event or other circumstance.

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### 3. OPERATING ARRANGEMENTS

#### 3.1 Obligations to Provide Energy Availability and to Deliver Electrical Energy

3.1.1 (a) In respect of a given week of any Contract Year, subject to Sections 3.6.8(a), the Generator shall make Declarations, make the Facility and each Generating Unit thereof Available in accordance with such Declarations and generate and deliver electrical energy, all in accordance with the terms and conditions of this Agreement.

(b) The Generator shall throughout the Term operate, maintain and repair the Generator System as required by this Agreement, Prudent Utility Practice, the Grid Code and all applicable Law to ensure the technical capability of the Generator System for the purpose of: (i) providing the Availability of the Facility up to the relevant Registered Capacity; (ii) providing the Registered Operating Characteristics; and (iii) delivering electrical energy to the Delivery Point for the EGAT System as Dispatched by EGAT.

3.1.2 The generation and delivery of electrical energy from the Generator System to the Delivery Point for the EGAT System shall comply with the terms and conditions of this Agreement and its Schedules, including all of the Contracted Supply Conditions provided in Schedule 1.

#### 3.2 Quality Of Supply From The Generator System

3.2.1 (a) The Generator shall maintain all Registered Operating Characteristics at the respective value of the Threshold Operating Characteristics. The consequences of such failure to maintain any Registered Operating Characteristics at the respective value of the Threshold Operating Characteristics are set out in Section 9.6.7.

(b) If at any time during the Term either the Generator is unable to maintain the relevant Registered Operating Characteristics or the generation and delivery of electrical energy from the Generator System does not comply with any of the applicable requirements of this Agreement (including those requirements related to Contracted Operating Characteristics or Registered Operating Characteristics, as applicable) or the Grid Code for any reason other than attributable solely to operational failure of any relevant part of the EGAT System, the Generator shall use its reasonable endeavors in accordance with Prudent Utility Practice to remedy such non-compliance or deficiencies as soon as reasonably practicable.

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3.2.2 Notwithstanding any other provisions of this Agreement to the contrary, the Generator shall not at any time during the Term issue or allow to remain outstanding:

- (a) with respect to Machine Availability, a Derived Declaration of generating capacity at such levels inferior to the Registered Capacity at the relevant time; or
- (b) with respect to both water availability and Machine Availability, a Weekly Declaration of Energy Availability at such levels or values that is unreasonably lower than that the Facility would have been able to provide based on the actual measurement or estimated value of Operating Water Head and the available information on Generator Planned Outage, Generator Maintenance Outage and/or Generator Affected Force Majeure Outage at the relevant time;

except, in either case:

- (i) with the written consent of EGAT;
- (ii) to the extent of repairing or maintaining the Generator System or any portion thereof necessary for the operation of the Facility, where such repair or maintenance cannot be, in accordance with Prudent Utility Practice, deferred to the scheduled time of the next Generator Planned Outage;
- (iii) where necessary to avoid an imminent risk of injury to persons or material damage to property (including the Generator System);
- (iv) to the extent that the operation of the Generator System is constrained by any Operational Limitation referred to in Section 3.5.1(b)(i); or
- (v) to the extent that the Generator or the Generator System is affected by a Force Majeure;

provided that the affected portion of the Registered Capacity or Energy Availability shall be deemed to be Unavailable in respect of each of such events or conditions, and the consequences thereof be accounted for in accordance with this Agreement.

### 3.3 Compliance with the Grid Code

3.3.1 Subject to Section 12.2, the Generator shall at all times throughout the Term comply with the Grid Code.

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- 3.3.2 If at any time there is a conflict or inconsistency between the Grid Code, as applied in accordance with Section 1.2.1(b), and the terms of this Agreement, the provisions of the Grid Code shall prevail.
- 3.3.3 EGAT shall use its reasonable endeavors to provide written advance notification (in any event, being no less than ten (10) days) of any proposed Change of Grid Code, including a description thereof and the period then intended for the Generator to comply with such Change of Grid Code. The Generator may provide comments to EGAT in regard to such proposed change. EGAT shall give due consideration to any such comment.
- 3.3.4 Upon receipt of notice of a Change of Grid Code pursuant to Section 3.3.3, the Generator shall comply with the requirements of any Change of Grid Code within the period stipulated in such notice of a Change of Grid Code as has been provided by EGAT to the Generator pursuant to Section 3.3.3; provided, however, that:
- (a) the Generator may only be required by such notices to comply immediately with any Change of Grid Code as may be the subject of any such advance notices which do not:
    - (i) require modifications of the Generator System;
    - (ii) adversely affect the operation of the Generator System; and/or
    - (iii) represent any of the circumstances or result in any of the effects set forth in Sections 12.2.5(b)(i), 12.2.5(b)(ii) or 12.2.5(b)(iii); and
  - (b) if modifications of the Generator System are required or the Generator System's operation would be adversely affected by a Change of Grid Code, the Generator shall, as soon as practicable after obtaining notice thereof, advise EGAT in writing of the need for such modifications and/or the mitigation of such adverse operational effects, and the anticipated length of time required in order for the Generator, acting diligently in accordance with Prudent Utility Practice, to modify the Generator System, its operations and/or procedures in order to comply as required by the terms of this Agreement with such Change of Grid Code. Thereupon, unless otherwise notified in writing by EGAT to discontinue such effort, the Generator shall, subject to Section 12.2, take immediate steps to comply with any such Change of Grid Code in accordance with the terms of such advance notice as such advance notice may thereafter be revised by EGAT to so accommodate the need and schedule for the Generator to effectuate such modification or mitigation.

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### 3.4 Main Characteristics regarding Operation and Control of the Generator System

- (a) The Generator shall operate the Facility as a Fully Dispatchable power generating facility and in compliance with EGAT's Dispatch Instructions given in accordance with this Agreement and as required during System Emergency as provided in Section 3.9.1.
- (b) The Parties shall coordinate operational and maintenance planning of the Generator System with the requirements of the EGAT System, on an annual, monthly, weekly, and daily basis, as well as such other basis as the Parties may mutually agree to in writing.
- (c) Without prejudice to the Generator's obligations in accordance with Section 3.1 and EGAT's right to Dispatch in accordance with Section 3.8.2(c), the Generator shall manage the use of water through the Declaration Procedures in accordance with this Agreement.

### 3.5 Declaration of Availability after the Commercial Operation Date

#### 3.5.1 (a) The Declaration Procedures

The Generator shall throughout the Term periodically Declare to EGAT the Energy Availability and the Declared Operating Characteristics by issuing declarations thereof (the "**Declarations**") in accordance with the terms and conditions of this Agreement including Schedule 3.

#### (b) Technical requirements regarding Declarations

- (i) The Generator shall take into account the effects of any and all physical and contractual constraints that restrict the operation of the Facility (the "**Operational Limitations**") in all its Declarations:
  - (1) the Machine Limitation;
  - (2) the Water Supply Limitation; and
  - (3) the Tailwater Level Limitation.
- (ii) In the event any Dispatched operation of the Facility based upon a Declaration that violates or ignores the effects of the Operational Limitations,
  - (1) the Generator shall remain solely responsible for any damage to the Generator System as a result thereof or in connection therewith; and

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- (2) in the event that EGAT is required to compensate a third party in respect of any physical losses or damages suffered or incurred by such third party in the Lao PDR as a result thereof or in connection therewith, the Generator shall hold EGAT harmless therefor.

(c) Provision and effect of Incremental Capacity

The Generator shall design, construct and install the Facility, all Generating Units and all relevant facilities such that the Facility shall be capable of providing Incremental Capacity for EGAT's Dispatch in accordance with the terms and conditions in this Agreement. Such capacity and capability to provide Incremental Capacity shall be considered a Contracted Operating Characteristics that the Generator is obliged to provide to EGAT.

Subject to the condition that EGAT's Dispatch complies with the limitation provided in Section 3.8.2(b), for the purposes of determining liquidated damages pursuant to any shortfall in the achieved generating capacity with respect to each and all Settlement Periods comprised in a given Incremental Capacity Period on and after the Commercial Operation Date, being equal to the positive difference resulting from the relevant Daily Declared Capacity less the achieved generating capacity, as applicable, the relevant Incremental Capacity for such Incremental Capacity Period shall be deemed to be the Daily Declared Capacity to be used for the determination of the said liquidated damages. In respect of the period prior to the Commercial Operation Date, the effect of Incremental Capacity shall not be taken into account for the determination of the said liquidated damages.

3.5.2 Limitations in respect of the Generator's Declaration

The Energy Availability that the Generator is entitled to Declare for each week during the Term shall comply with all the following limitations:

(a) Weekly Maximum Primary Energy Declaration

The Weekly PE Availability that the Generator may Declare in any given week in its Weekly Declaration shall not exceed the amount of electrical energy equal to the Weekly Declared Capacity for the given week times sixteen (16) hours per Weekday, multiplied by the number of Weekdays comprised in such week, net of any and all relevant Week Ahead Unavailability in respect of the PE Period that has been

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included in such Weekly Declaration. Such amount of energy shall be defined as “**Weekly Maximum Primary Energy Declaration**” in respect of such week.

(b) Weekly Maximum Secondary Energy Declaration

The Weekly SE Availability that the Generator may Declare in any given week in its Weekly Declaration shall not exceed the “**Weekly Maximum Secondary Energy Declaration**” in respect of such week, being defined as the amount of electrical energy equal to the Weekly Declared Capacity for the given week times the number equal to the sum of:

- (i) five point three five (5.35) hours per Weekday multiplied by the number of Weekdays comprised in such week; and
- (ii) eight (8) hours per Sunday comprised in such week;

net of any and all relevant Week Ahead Unavailability in respect of the SE Period that has been included in such Weekly Declaration.

The Additional Energy Availability that the Generator is entitled to Declare for each day for which the Daily Declared Capacity is greater than the relevant Weekly Declared Capacity shall comply with all the following limitations:

(c) Daily Maximum Additional Primary Energy Declaration

The Daily Additional PE Availability that the Generator may Declare in any given day in its Derived Declaration shall not exceed the amount of electrical energy equal to the Daily Additional Declared Capacity for the given day times sixteen (16) hours per Weekday. Such amount of energy shall be defined as “**Daily Maximum Additional Primary Energy Declaration**” in respect of such day.

(d) Daily Maximum Additional Secondary Energy Declaration

The Daily Additional SE Availability that the Generator may Declare in any given day in its Derived Declaration shall not exceed the “**Daily Maximum Additional Secondary Energy Declaration**” in respect of such day, being defined as the amount of electrical energy equal to the Daily Additional Declared Capacity for the given day times the number equal to either:

- (i) for a Weekday, five point three five (5.35) hours; or

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- (ii) for Sunday, eight (8) hours.

### 3.5.3 Effectiveness and Validity of the Declaration Procedures

#### (a) Achievability of Declarations

Except as provided in Section 3.8.2, all Declarations of Availability of the Facility for the respective periods associated with the relevant Weekly Declaration or Derived Declaration, as applicable, shall be able to be continuously and sustainably achievable in respect thereof upon EGAT's Dispatch in accordance with Section 3.8.1, for the whole range of operation for which it has been Declared to be Available and for any Settlement Period (and any portion thereof) within each such period associated with the relevant Weekly Declaration or Derived Declaration, as applicable.

#### (b) Adjustability of Declarations

Energy Availability that has been Declared by the Generator may be adjusted downwards through the Generator's later Declaration or by EGAT's verification regarding the relevant Machine Limitation, Water Supply Limitation or Tailwater Level Limitation, including through actual Dispatch. Any such adjustment by the Generator after a Weekly Declaration or a Derived Declaration shall not be deemed to be a revision or a substitution of such original Weekly Declaration or such original Derived Declaration that has been submitted to EGAT.

Any actual Availability that is better than that contained in any Declaration shall not be included in the determination of the Final Declaration.

### 3.5.4 Effect of the Declaration Procedures

Subject to Section 3.8.2, EGAT's daily and weekly operation, both scheduled and actual, shall be based on the information provided by the Generator's Declaration and the relevant quantity derived therefrom, including the relevant Daily Declared Capacity and the relevant Unit Operating Range, all as defined or determined in accordance with Schedule 3.

- 3.5.5 In respect of any Weekly Declaration or any Derived Declaration delivered to EGAT by the Generator, without prejudice to EGAT's right to issue Post Event Notice as provided in Section 3.5.7 or the Generator's responsibility for its Declaration under this Agreement, EGAT shall be entitled at any time prior to the commencement of the relevant period associated with the relevant Weekly Declaration or Derived Declaration, as applicable, to notify the Generator of:

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- (a) any errors in or any proposed variation to such Declarations; and/or
- (b) the Generator's failure to comply with the provisions of this Agreement and/or its Schedules in providing such Declarations.

In the event that the Generator agrees on any corrections or variation proposed by EGAT in respect of any such original Weekly Declaration or Derived Declaration, the Generator shall as soon as practicable thereafter deliver to EGAT a revised Weekly Declaration or a revised Derived Declaration (as the case may be), for the relevant period associated with the relevant Weekly Declaration or Derived Declaration, as applicable, which shall substitute the original Weekly Declaration or Derived Declaration for all purposes under this Agreement.

- 3.5.6 Any Derived Declaration or Interim Declaration may be given by telephone in accordance with the Grid Code or by electronic mail. The respective notice shall be confirmed by facsimile issued by the Generator or via internet webpages submitted by the Generator, or by using another newly available technology as requested by EGAT, as soon as possible thereafter and in any event shall be sent to EGAT within two (2) hours following such notice by telephone or electronic mail. Where such confirmation is so sent by a facsimile, it shall state clearly that it is in confirmation of a notice already given by telephone or electronic mail and must state the exact time at which the notice was given by telephone.

3.5.7 Post Event Notice

- (a) Without prejudice to EGAT's right to review and dispute any Generator Daily Confirmation Statement, Generator Weekly Confirmation Statement, Meter Reconciliation Statement and/or Generator Payment Invoice in accordance with Sections 6 and 7, EGAT may issue a Post Event Notice to the Generator if either:
  - (i) monitoring carried out pursuant to the Grid Code demonstrates that either:
    - (1) the generating capacity that is actually Available for any Settlement Period differs from the generating capacity that has been Declared for such Settlement Period; and/or
    - (2) any actual Operating Characteristic of any Generating Unit or the Facility differs from the relevant Registered Operating Characteristics or

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Declared Operating Characteristics, as applicable; or

- (ii) any Declaration made by the Generator does not comply with the applicable terms of this Agreement, including violating any Operational Limitations.
- (b) EGAT shall notify the Generator of a Post Event Notice by telephone and confirm the same by delivering the Post Event Notice in writing to the Generator and in any event such Post Event Notice shall be delivered to the Generator not later than 5 p.m. on the date falling on:
- (i) for Post Event Notices issued pursuant to Section 3.5.7(a)(i), the fifth Business Day after the day on which the relevant event occurred; and
  - (ii) for Post Event Notices issued pursuant to Section 3.5.7(a)(ii), the fifth Business Day after the day to which a Derived Declaration or Interim Declaration relates or the end of the week in which the relevant Weekly or Final Declaration was delivered, as applicable.
- (c) A Post Event Notice shall specify:
- (i) the Settlement Period during which the relevant event occurred or the relevant Declaration or determination was related to; and
  - (ii) the matters which EGAT disagrees with the Generator's Declaration.
- (d) The relevant matter specified in a Post Event Notice may be related to any or all items of the following:
- (i) Weekly Declaration;
  - (ii) Derived Declaration;
  - (iii) Interim Declaration; and
  - (iv) Final Declaration.
- (e) For any week associated with one or more Post Event Notices, the Generator shall take into account the information contained in such Post Event Notices that is known to the Generator at the relevant time in its preparation of Generator Daily Confirmation Statements and Generator Weekly Confirmation Statements, as applicable, provided that if the Parties are unable

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to agree on any matter related to such information and to the extent that such disagreement affects any amount in the Generator Daily Confirmation Statement or the Generator Weekly Confirmation Statement, such amount shall be considered as a disputed amount to be resolved in accordance with Sections 6 and 7.

### 3.6 Outages and Unavailability in respect of the Generator System

The outage that affects the Generator in performing its obligation shall be classified according to the nature of its cause into three mutually exclusive categories:

- (1) Outage that is related to a Machine Limitation referred to in Section 3.5.1(b)(i)(1), such outage being referred to as a “**Machine Outage**”;
- (2) Outages that is related to a Water Supply Limitation or a Tailwater Level Limitation, such outages being referred to as a “**Water Supply Outage**” and “**Tailwater Level Outage**”, respectively; and
- (3) Outage that is related to Force Majeure, as further provided in Section 3.6.8.

A Machine Outage, a Water Supply Outage or a Tailwater Level Outage shall be classified or defined based on the prior notice time that the Generator informs EGAT of the occurrence thereof as follows:

- (i) a Machine Outage shall be classified as either a Generator Planned Outage or a Generator Unplanned Outage, to be further provided in Sections 3.6.1 and 3.6.2, respectively;
- (ii) a Machine Outage that is associated with a Generator Unplanned Outage shall be defined as an “**Unplanned Machine Outage**”, to be further provided in Section 3.6.6;
- (iii) a Water Supply Outage a Water Supply Outage or a Tailwater Level Outage shall be classified as a Generator Unplanned Outage, to be further provided in Sections 3.6.7; and
- (iv) a Generator Unplanned Outage, regardless of whether it is an Unplanned Machine Outage, a Water Supply Outage or a Tailwater Level Outage, shall, subject to Section 3.6.9, be classified into a Generator Maintenance Outage, a Generator Short Notice Outage or a Generator Forced Outage, as further provided in Sections 3.6.3, 3.6.4 and 3.6.5; or an Exceptional Outage in accordance with Paragraph 1.7 of Part I of Schedule 3, respectively.

#### 3.6.1 Generator Planned Outages

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- (a) Table 20.3 of Part I of Schedule 20 sets out the Maintenance Plan which provides an indicative schedule for the number, duration, intervals and maintenance works of the respective Maintenance Type associated with Generator Planned Outages during the Term.
- (b) The Generator shall submit to EGAT the program of Generator Planned Outages, the respective scheduled outage start times (each a “**Scheduled Outage Start Time**”) and the respective scheduled outage finish times (each a “**Scheduled Outage Finish Time**”) therefor for any Contract Year in accordance with Paragraph 1.1 of Part I of Schedule 3.
- (c) For the avoidance of doubt:
- (i) EGAT may reschedule any Generator Planned Outage by notifying the Generator of such rescheduling at any time no less than three (3) Full Calendar Months prior to the relevant Scheduled Outage Start Time. In the event that EGAT notifies the Generator of such rescheduling at a time that is less than three (3) Full Calendar Months prior to the relevant Scheduled Outage Start Time, Section 9.6.8 shall apply.

Any Generator Planned Outage which has been rescheduled pursuant to EGAT’s notification above shall be deemed to cancel the previous Generator Planned Outage and to constitute a new Generator Planned Outage.

- (ii) Without prejudice to the procedures regarding the Initial Period Planned Outage Program provided in Paragraph 1.1.1 of Part I of Schedule 3, subject to the compliance with the Grid Code and the prior written approval of EGAT (such approval not to be unreasonably withheld or delayed), the Generator may reschedule any Generator Planned Outage at such times and for such duration as it shall consider to be necessary or appropriate by notifying EGAT no less than one (1) Full Calendar Month prior to the Scheduled Outage Start Time of such Generator Planned Outage. Subject to Section 3.7.2(B)(b), any Generator Planned Outage which has been so rescheduled shall be deemed to cancel the previous Generator Planned Outage and to constitute a new Generator Planned Outage.
- (iii) Nothing shall prevent the Generator from carrying out any emergency maintenance or other maintenance or repair of the Generator System (or any facility,

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equipment, or system thereof) which cannot, in accordance with Prudent Utility Practice, be deferred until the period scheduled for the next Generator Planned Outage, provided that such emergency maintenance or other maintenance or repair shall be considered as a Generator Maintenance Outage, a Generator Short Notice Outage or a Generator Forced Outage in accordance with Sections 3.6.3, 3.6.4 or 3.6.5 or an Exceptional Outage in accordance with Paragraph 1.7 of Part I of Schedule 3, respectively.

- (iv) Subject to Sections 3.6.9 and 3.7.2(B), the relevant Generating Unit shall be deemed to be Unavailable for the purpose of the determination of Final Declaration on and after the applicable Scheduled Outage Start Time.
- (v) Subject to Sections 3.5.3, 3.6.9 and 3.7.2(B), the relevant Generating Unit shall be deemed to be Available for the purpose of the determination of Final Declaration on and after the applicable Scheduled Outage Finish Time.

### 3.6.2 Generator Unplanned Outages

#### (a) Obligation to notify in respect of Generator Unplanned Outages

The Generator shall provide notice to EGAT of:

- (i) the expected outage start time and the expected outage finish time of any Generator Unplanned Outage;
- (ii) the characterization of such Generator Unplanned Outage as to whether it is an Unplanned Machine Outage or a Water Supply Outage or a Tailwater Level Outage;
- (iii) in the case of an Unplanned Machine Outage, the identification of the Generating Unit(s) in association therewith; and
- (iv) any change in the Scheduled Outage Start Time, Notified Outage Start Time, Scheduled Outage Finish Time or Notified Outage Finish Time of any Generator Unplanned Outage, as applicable,

as soon as is reasonably practicable.

- (b) In the event of a Generator Maintenance Outage, such expected outage start time provided in Section 3.6.2(a) shall be defined

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as the “**Scheduled Outage Start Time**” of such Generator Maintenance Outage, and such expected outage finish time provided in Section 3.6.2(a) shall be defined as the “**Scheduled Outage Finish Time**” of such Generator Maintenance Outage.

- (c) In the event of a Generator Short Notice Outage or a Generator Forced Outage, such expected outage start time provided in Section 3.6.2(a) shall be defined as the “**Notified Outage Start Time**” of such Generator Short Notice Outage or Generator Forced Outage, respectively, and such expected outage finish time provided in Section 3.6.2(a) shall be defined as the “**Notified Outage Finish Time**” of such Generator Short Notice Outage or Generator Forced Outage, respectively.

In the event that the Generator notifies EGAT of the occurrence for a Generator Forced Outage after its occurrence, the Notified Outage Start Time of such Generator Forced Outage shall be the time at which such Generator Forced Outage actually starts.

- (d) In respect of an Unplanned Machine Outage, subject to Section 3.6.9,
- (i) the relevant Generating Unit shall be deemed to be Unavailable for the purpose of the determination of Final Declaration on and after the Scheduled Outage Start Time or Notified Outage Start Time, as applicable; and
- (ii) subject to Sections 3.5.3 and 3.7.2(B), the relevant Generating Unit shall be deemed to be Available for the purpose of the determination of Final Declaration on and after the Scheduled Outage Finish Time or Notified Outage Finish Time, as applicable.
- (e) In respect of a Water Supply Outage or a Tailwater Level Outage:
- (i) the expected outage start time provided in Section 3.6.2(a) shall be the earliest time after which the Facility shall, other than due to the limitation set forth in Section 3.8.2(b), no longer be continuously and sustainably Available for EGAT’s Dispatch at the Registered Capacity for the maximum number of Generating Units that has been Declared Available for such day;
- (ii) the expected outage finish time provided in Section 3.6.2(a) shall be the end of the day immediately prior to the day for which the Facility shall, subject to Section 3.8.2, be able to be continuously and sustainably

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Available for EGAT's Dispatch at the Registered Capacity for the maximum number of Generating Units that has been Declared Available for such day; and

- (iii) the Generator shall notify EGAT from time to time of the Unavailability associated with any Water Supply Outage or any Tailwater Level Outage of the relevant day, as applicable.
- (f) Obligation to mitigate in respect of the Generator Unplanned Outages

The Generator shall use its reasonable endeavors to remedy the action or condition giving rise to a Generator Short Notice Outages or a Generator Forced Outage as soon as practicable in accordance with Prudent Utility Practice.

### 3.6.3 Generator Maintenance Outages

In the event that either:

- (a) the notice of occurrence for a Generator Unplanned Outage provided in Section 3.6.2(a) is delivered to EGAT at least twenty two (22) hours prior to its occurrence;
- (b) the continuance of a Generator Short Notice Outage provided in Section 3.6.4(a) is included in the relevant Derived Declaration in accordance with Section 3.6.4(b); or
- (c) the continuance of a Generator Forced Outage provided in Section 3.6.5(a) is included in the relevant Derived Declaration in accordance with Section 3.6.5(c),

such Generator Unplanned Outage in Section 3.6.3(a), such continuing portion of Generator Short Notice Outage in Section 3.6.3(b) or such continuing portion of Generator Forced Outage in Section 3.6.3(c), as applicable, shall be classified as a Generator Maintenance Outage.

### 3.6.4 Generator Short Notice Outages

- (a) In the event that the notice of occurrence for a Generator Unplanned Outage provided in Section 3.6.2(a) is delivered to EGAT at a time at least thirty (30) minutes but less than twenty two (22) hours prior to its occurrence, such Generator Unplanned Outage shall, subject to Section 3.6.4(b), be classified as a Generator Short Notice Outage.

- (b) In the event that:

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- (i) the relevant Generating Unit is unable to resume operation; or
- (ii) the Water Supply Outage or the Tailwater Level Outage does not cease,

prior to the beginning of the day for which the next Derived Declaration relates, the original Generator Short Notice Outage shall cease and the continuing portion of such Generator Short Notice Outage shall become a Generator Maintenance Outage after that continuing portion has been included in such Derived Declaration, whereupon the Generator shall also specify the Scheduled Outage Finish Time of such Generator Maintenance Outage. Such conversion, and also the Notified Outage Finish Time of the original Generator Short Notice Outage and the Scheduled Outage Start Time of the Generator Maintenance Outage, shall occur upon the commencement of the day that such Derived Declaration relates.

- (c) For the avoidance of doubt, a Generator Short Notice Outage associated with a Water Supply Outage or a Tailwater Level Outage shall include shortfall in generating capacity for which the Daily Declared Capacity is less than the relevant Weekly Declared Capacity, determined on the basis of the positive difference resulting from the relevant Weekly Declared Capacity less the relevant Daily Declared Capacity, provided that the Notification Time Factor for the purposes of determining the relevant liquidated damages shall be equal to one (1) under such circumstances.

#### 3.6.5 Generator Forced Outage

- (a) In the event that the notice of occurrence for a Generator Unplanned Outage provided in Section 3.6.2(a) is delivered to EGAT either less than thirty (30) minutes prior to its occurrence or after its occurrence, such Generator Unplanned Outage shall, subject to Section 3.6.5(c), be classified as a Generator Forced Outage.
- (b) Without prejudice to Section 3.6.2(a), the Generator shall provide to EGAT as soon as practicable (and in any event no later than one (1) hour after the occurrence of such Generator Forced Outage) and in accordance with the Grid Code:
  - (i) an explanation of the cause of such Generator Forced Outage; and
  - (ii) the Notified Outage Finish Time of such Generator Forced Outage.

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- (c) In the event that:
- (i) the relevant Generating Unit is unable to resume operation; or
  - (ii) the Water Supply Outage or the Tailwater Level Outage does not cease,

prior to the beginning of the day for which the next Derived Declaration relates, the original Generator Forced Outage shall cease and the continuing portion of such Generator Forced Outage shall become a Generator Maintenance Outage after that continuing portion has been included in such Derived Declaration, whereupon the Generator shall also specify the Scheduled Outage Finish Time of such Generator Maintenance Outage. Such conversion, and also the Notified Outage Finish Time of the original Generator Forced Outage and the Scheduled Outage Start Time of the Generator Maintenance Outage, shall occur upon the commencement of the day that such Derived Declaration relates.

- (d) For the avoidance of doubt, a Generator Forced Outage associated with an Unplanned Machine Outage shall include shortfall in generating capacity due to:
- (i) start-up failure or start-up delays;
  - (ii) failure to achieve the Unit Dispatch Level according to Part IV of Schedule 7; and
  - (iii) tripping of a Generating Unit.

#### 3.6.6 Unplanned Machine Outage

In the event either pursuant to the Generator's Declarations or EGAT's Dispatch, the generating capacity of the Generating Units that are Available for EGAT's Dispatch is less than the corresponding Registered Capacity due to Machine Limitation, net of any effect associated with Generator Planned Outages and Generator Affected Force Majeure Outage, an Unplanned Machine Outage shall have occurred.

#### 3.6.7 Water Supply Outage and Tailwater Level Outage

In the event either pursuant to the Generator's Interim Declarations or EGAT's Dispatch, the the maximum amount of electrical energy that is achievable upon EGAT's Dispatch during the PE Period or the SE Period of the relevant day, as applicable, is less than the respective Daily Machine Unavailability Limited Energy calculated in

accordance with Paragraph 2.2.2 of Part II of Schedule 3, either a Water Supply Outage or a Tailwater Level Outage shall have occurred, which shall be classified as a Generator Maintenance Outage, a Generator Short Notice Outage or a Generator Forced Outage in accordance with Sections 3.6.3, 3.6.4 and 3.6.5.

The effect of a Water Supply Outage or a Tailwater Level Outage, as the case may be, on the calculation of Weekly Unavailability shall be determined in accordance with Paragraphs 1.3, 1.4, 2.2.3 and 2.2.4 of Part II of Schedule 3.

In respect of any Water Supply Outage or any Tailwater Level Outage, as the case may be, liquidated damages shall be payable by the Generator in respect of the associated Generator Maintenance Outage, Generator Short Notice Outage or Generator Forced Outage pursuant to Sections 9.6.4, 9.6.3 or 9.6.2, as applicable.

3.6.8 Generator Affected Force Majeure Outage and Weekly Force Majeure Unavailability

- (a) In respect of a given week after the Commercial Operation Date, in the event that the Generator's obligation to make Declarations in accordance with this Agreement or to provide Energy Availability and deliver electrical energy to the Delivery Point for the EGAT System in accordance therewith is wholly or partially affected by a Force Majeure, such obligation shall be suspended in accordance with Section 11 to the extent of the Unavailability resulting therefrom. The outage associated therewith shall be defined as a "**Generator Affected Force Majeure Outage**" and the month during which such Generator Affected Force Majeure Outage occurs shall be defined as a "**Generator Affected FM Week**".
- (b) For the purpose of determining the relevant Final Declaration, the effect of the Generator Affected Force Majeure Outage is set out in Section 3.7.2(A).
- (c) For the purpose of determining Force Majeure Offset Amounts, the relevant Weekly Force Majeure Unavailability for each Generator Affected FM Week, including the adjustment associated with any Generator Excused FMOA Period, as applicable, shall be calculated in accordance with Paragraph 1 of Schedule 10.
- (d) Depending on the cause of the relevant Generator Affected Force Majeure Outage that occurs, either Party shall pay Force Majeure Offset Amounts in respect of such Generator Affected Force Majeure Outage to the other Party on the basis of the relevant Weekly Force Majeure Unavailability, as further

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determined in accordance with Paragraph 1 of Schedule 10, Section 11.7.4 and Section 11.8.4, as applicable.

3.6.9 Effects of Change in or Deviation from the Expected Outage Start Time or Expected Outage Finish Time

For the purpose of this Agreement:

- (i) the “**Original Outage Start Time**” shall be defined as the scheduled outage start time that is comprised in the program of a Generator Planned Outage or the expected outage start time of a Generator Unplanned Outage that the Generator first notifies EGAT in accordance with Section 3.6.2(a), as the case may be; and
- (ii) the “**Original Outage Finish Time**” shall be defined as the scheduled outage finish time that is comprised in the program of a Generator Planned Outage or the expected outage finish time of a Generator Unplanned Outage that the Generator first notifies EGAT in accordance with Section 3.6.2(a), as the case may be;
- (iii) the “**Actual Outage Start Time**” shall be defined as the time at which the out of service condition associated with such Generator Planned Outage or such Generator Unplanned Outage referred to in paragraph (i) above actually starts, as evidenced by either the notification of the Generator or the Post Event Notice of EGAT in association therewith, as the case may be; and
- (iv) the “**Actual Outage Finish Time**” shall be defined as the time at which the out of service condition associated with such Generator Planned Outage or such Generator Unplanned Outage referred to in paragraph (ii) above actually finishes, as evidenced by either the notification of the Generator or the Post Event Notice of EGAT in association therewith, as the case may be.

Without prejudice to Section 3.7, in the event that either: (1) the Generator notifies EGAT of any new expected outage start time or new expected outage finish time regarding the out of service condition associated with any Generator System Outage that is different from the relevant Original Outage Start Time or the relevant Original Outage Finish Time; or (2) the Actual Outage Start Time or the Actual Outage Finish Time associated with any Generator System Outage is different from the relevant Original Outage Start Time or the relevant Original Outage Finish Time, as the case may be, in order to determine the number and types of Generator System Outages for the purpose of calculating liquidated damages,

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- (i) the relevant Original Outage Start Time shall define the earliest start time; and
- (ii) the relevant Original Outage Finish Time shall define the latest finish time,

for which the type of such Generator Planned Outage or such Generator Unplanned Outage corresponding to such Original Outage Start Time or Original Outage Finish Time shall remain and no new Generator System Outage is established. The results of such notification or deviation may be either: (I) a Generator System Outage of the same type as the one prior to such notification or deviation; or (II) a separate Generator Unplanned Outage; or (III) a combination of (I) and (II), which shall be provided as follows:

- (A) The cases where either: (1) the new expected outage finish time or the Actual Outage Finish Time, as the case may be, is earlier than the Original Outage Start Time; or (2) the new expected outage start time or the Actual Outage Start Time, as the case may be, is later than the Original Outage Finish Time

Other than the establishment of a new Generator Planned Outage and the cancellation of the related original Generator Planned Outage pursuant to Sections 3.6.1(c)(i) or 3.6.1(c)(ii), in the event that either:

- (i) the Generator notifies EGAT of any new expected outage finish time of any Generator System Outage that is earlier than the Original Outage Start Time; or
- (ii) the Actual Outage Finish Time of any Generator System Outage is earlier than the Original Outage Start Time; or
- (iii) the Generator notifies EGAT of any new expected outage start time of any Generator System Outage that is later than the Original Outage Finish Time; or
- (iv) the Actual Outage Start Time of any Generator System Outage is later than the Original Outage Finish Time,

then: (1) the Generator System Outage that is associated with such Original Outage Start Time or Original Outage Finish Time, as the case may be, shall be cancelled; and (2) a separate Generator Unplanned Outage shall be deemed to have occurred. Such separate Generator Unplanned Outage shall be classified as a Generator Maintenance Outage, a Generator Short Notice Outage or a Generator Forced Outage in accordance with Sections 3.6.3, 3.6.4 and 3.6.5.

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- (B) All cases that do not satisfy any condition provided in (A)

- (a) Other than the establishment of a new Generator Planned Outage and the cancellation of the related original Generator Planned Outage pursuant to Sections 3.6.1(c)(i) or 3.6.1(c)(ii), in the event that either:
- (i) the Generator notifies EGAT of any new expected outage start time of any Generator System Outage that is earlier than the Original Outage Start Time; or
  - (ii) the Actual Outage Start Time of any Generator System Outage is earlier than the Original Outage Start Time,

then: (1) the type of the Generator System Outage that is associated with such Original Outage Start Time shall remain unchanged for the determination of liquidated damages; and (2) a separate Generator Unplanned Outage with Outage duration equal to such additional portion of outage time shall be deemed to have occurred. Such separate Generator Unplanned Outage shall be further classified as a Generator Maintenance Outage, a Generator Short Notice Outage or a Generator Forced Outage in accordance with Sections 3.6.3, 3.6.4 and 3.6.5.

- (b) Other than the establishment of any new Generator Planned Outage and the cancellation of the related original Generator Planned Outage pursuant to Sections 3.6.1(c)(i) or 3.6.1(c)(ii) and subject to Section 3.7.2(B)(b), in the event that either:
- (i) the Generator notifies EGAT of any new expected outage start time of any Generator System Outage that is later than the Original Outage Start Time; or
  - (ii) the Actual Outage Start Time of any Generator System Outage is later than the Original Outage Start Time,

then the type of the Generator System Outage that is associated with such Original Outage Start Time shall remain unchanged for the determination of liquidated damages.

- (c) In the event that either:

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- (i) the Generator notifies EGAT of any new expected outage finish time of any Generator System Outage that is later than the Original Outage Finish Time; or
- (ii) the Actual Outage Finish Time of any Generator System Outage is later than the Original Outage Finish Time,

then: (1) the type of the Generator System Outage that is associated with such Original Outage Finish Time shall remain unchanged for the determination of liquidated damages; and (2) a separate Generator Unplanned Outage with Outage duration equal to such additional portion of outage time shall be deemed to have occurred. Such separate Generator Unplanned Outage shall be further classified as a Generator Maintenance Outage, a Generator Short Notice Outage or a Generator Forced Outage in accordance with Sections 3.6.3, 3.6.4 and 3.6.5.

- (d) Subject to Section 3.7.2(B)(b), in the event that either:
  - (i) the Generator notifies EGAT of any new expected outage finish time of any Generator System Outage that is earlier than the Original Outage Finish Time; or
  - (ii) the Actual Outage Finish Time of any Generator System Outage is earlier than the Original Outage Finish Time,

then the type of the Generator System Outage that is associated with such Original Outage Finish Time shall remain unchanged for the determination of liquidated damages.

### **3.7 Effects of Outage and Unavailability in respect of the Generator System**

3.7.1 For the purposes of accounting the effects that the Facility or any portion thereof is not Available for Dispatch:

- (a) the classification scheme for events that is based on categorization of Unavailability in respect of the Generator System as set forth in Section 3.7.2(A) shall be used for the purposes of determining Final Declaration;
- (b) the classification scheme for events that is based on categorization of Generator System Outages as set forth in

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Section 3.7.3(a) shall be used for the purposes of determining liquidated damages;

- (c) the classification scheme for events that is based on categorization of Force Majeure as set forth in Sections 3.7.2(A)(a) and 3.7.2(A)(c) shall be used for the purposes of determining the Final Declaration; and
- (d) the classification scheme for events that is based on categorization of Force Majeure as set forth in Sections 3.6.8, 3.8.4, 11.7 and 11.8 shall be used for the purposes of determining the Force Majeure Offset Amounts payable by either Party.

### 3.7.2 Effects of Unavailability in respect of Final Declaration

#### (A) Classification of Unavailability

For the purpose of the determination of Final Declaration, the effects of Unavailability in respect of the Generator System are categorized as follows:

- (a) Pre Declared Unavailability shall be defined as the Unavailability associated with any Machine Outage and/or any Generator Affected Force Majeure Outage the effect of which has been included in the Weekly Declaration and/or the Derived Declaration.

Pre Declared Unavailability shall be classified as follows:

- (i) Week Ahead Unavailability, defined as Unavailability associated with any Machine Outage and/or any Generator Affected Force Majeure Outage the effect of which is included in the relevant Weekly Declaration; and
- (ii) Day Ahead Unavailability, defined as Unavailability associated with any Machine Outage and/or any Generator Affected Force Majeure Outage the effect of which is not included in the relevant Weekly Declaration but is included in the relevant Derived Declaration.

For the avoidance of doubt, notwithstanding that all Unavailability associated with a Machine Outage and/or a Generator Affected Force Majeure Outage that is included in the relevant Weekly Declaration shall be Declared in the

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Derived Declaration, the effect of such Unavailability shall have been taken into account in the Weekly Declaration and is therefore not classified as Day Ahead Unavailability.

- (b) Undeclared Unavailability shall be defined as the Unavailability associated with any Machine Outage the effect of which has not been included in the Derived Declaration.
  - (c) Undeclared Force Majeure Unavailability shall be defined as the Unavailability associated with any Generator Affected Force Majeure Outage the effect of which has been included in neither the Weekly Declaration nor the Derived Declaration, and shall be accounted for in the same way as Pre Declared Unavailability regardless of the timing that the relevant Force Majeure is notified by the Generator to EGAT.
  - (d) Water Supply Unavailability shall be defined as the Unavailability associated with any Water Supply Outage.
  - (e) Tailwater Level Unavailability shall be defined as the Unavailability associated with any Tailwater Level Outage.
- (B) Determination of Unavailability Period
- (a) Additional Unavailability Period

For the purpose of the determination of Final Declaration, in respect of the relevant Unavailability associated with any given Generator System Outage, in the event that the period during which the relevant Generating Unit is actually Unavailable due to Machine Outage differs from the original Unavailability Period that has been Declared by the Generator, the portion of such actual duration which the relevant Generating Unit is Unavailable due to Machine Outage that is outside the original Unavailability Period notified by the Generator, either due to an earlier start or a later finish of the relevant Generator System Outage, shall be considered as an additional Unavailability Period associated with either a Pre Declared Unavailability or an Undeclared Unavailability according to the criteria provided in Sections 3.7.2(A)(a) and 3.7.2(A)(b), respectively.

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(b) Pre Declared Unavailability

In the event that the Generator notifies EGAT regarding any change in the expected outage start time or expected outage finish time of any Generator Planned Outage or Generator Maintenance Outage after a given Weekly Declaration, the Unavailability Period of such Pre Declared Unavailability in such Weekly Declaration that is associated with such Generator Planned Outage or Generator Maintenance Outage shall not be affected by such notification for the purpose of determining the Final Declaration of such week.

(c) Undeclared Unavailability

Notwithstanding such notification of Notified Outage Finish Time of a Generator Short Notice Outage or a Generator Forced Outage but subject to Section 3.6.9 and the conversion to Generator Maintenance Outage in accordance with Sections 3.6.4(b) and 3.6.5(c), the Unavailability Period for any Undeclared Unavailability associated with such Generator Short Notice Outage or Generator Forced Outage shall be defined as the period starting from the actual start time of such relevant Generator Short Notice Outage or Generator Forced Outage until the later of: (aa) the Notified Outage Finish Time; (bb) the time at which such Generator Short Notice Outage or Generator Forced Outage actually finishes or is reclassified to be a new type of Generator Unplanned Outage in accordance with Sections 3.6.9, 3.6.4(b) or 3.6.5(c), as applicable; and (cc) the end of the Notifying Period.

In respect of the cessation for a Generator Short Notice Outage or a Generator Forced Outage, the “**Notifying Period**” thereof shall be defined to be the four (4) hour period starting from the time when such outage cessation notice, which notifies EGAT that the relevant Generator System Outage has finished and the relevant Generating Units are Available for EGAT’s Dispatch, is delivered to EGAT.

In connection with the computation of such Notifying Period, for the purpose of the determination of Final Declaration, such Unavailability associated with any Generator Short Notice Outage or Generator Force Outage occurring during the PE Period may continue into the SE Period, and vice versa.

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- (d) The application of the effects of Unavailability in respect of the Generator System for the purpose of the determination of Final Declaration shall be in accordance with Schedule 3.

### 3.7.3 Effects of Outage in respect of Liquidated Damages

Subject to Section 3.6.9, for the purpose of determining liquidated damages in respect of any Generator Unplanned Outage:

- (a) the Generator Unplanned Outage shall be classified in accordance with Sections 3.6.2(a), 3.6.3, 3.6.4 and 3.6.5; and
- (b) the outage duration shall be the period starting from either: (I) the time at which such Generator Unplanned Outage actually starts; or (II) the time at which such Generator Unplanned Outage is deemed to have occurred in accordance with Sections 3.6.9, 3.6.4(b) or 3.6.5(c), as applicable, until the earlier to occur of: (i) the time at which such Generator Unplanned Outage actually finishes; and (ii) the time at which such Generator Unplanned Outage is reclassified to be a new type of Generator Unplanned Outage in accordance with Section 3.6.9 or is converted to a Generator Maintenance Outage pursuant to Sections 3.6.4(b) and 3.6.5(c), as applicable.

## 3.8 **Dispatch Scheduling And Dispatch**

### 3.8.1 EGAT's Rights to Dispatch and EGAT's Obligation to Maintain its Capability to Dispatch the Facility and to Receive Electrical Energy generated therefrom

- (a) Subject to the limitations set forth in Section 3.8.2 and other than as required pursuant to Sections 2.10.6 and 2.11.6, EGAT shall have the right and discretion, but not the obligation, to Dispatch any Generating Unit or any combination of Generating Units at any time, for any duration and at any Unit Dispatch Level, taking into account the order of Dispatch priority among Generating Units set forth by the Generator. Such Dispatch by EGAT shall be on a Unit by Unit basis.
- (b) Notwithstanding the absence of a contractual obligation on the part of EGAT to Dispatch any Generating Unit Declared to be Available by the Generator, EGAT shall throughout the Term maintain the capability of the EGAT System in order to Dispatch a Generating Unit or a combination of Generating Units and to receive the electrical energy that is Available to be generated thereby to be delivered to the Delivery Point for the EGAT System.

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In the event that EGAT's obligation to maintain the capability of the EGAT System in order to Dispatch a Generating Unit or a combination of Generating Units and to receive the electrical energy generated thereby is wholly or partially affected by a Thai Political Force Majeure, a Lao Political Force Majeure or an EGAT Force Majeure, the interruption or diminishment of the capability of the EGAT System to Dispatch a Generating Unit or a combination of Generating Units and to receive the electrical energy that is Available to be generated thereby due to such Force Majeure shall be defined as an "**EGAT Affected Force Majeure Outage**". The week during which such EGAT Affected Force Majeure Outage occurs shall be defined as an "**EGAT Affected FM Week**".

- (c) Each Generating Unit shall operate in accordance with the Dispatch Instruction, including through voice communication or the Automatic Generation Control (AGC) and Automatic Generation Voltage Control (AGVC) signals issued from the National Control Center, separately transmitted to such Generating Unit through the SCADA and Communication System on a Unit by Unit basis.

EGAT shall set the level of generating capacity that is to be generated by each Generating Unit (each such level is referred to as an "**Unit Dispatch Level**"). The sum of all relevant Unit Dispatch Levels as per a particular Dispatch Instruction is defined as the "**Facility Dispatch Level**". Any Unit Dispatch Level shall be referred to at the high side of the Generator transformer of the respective Generating Unit.

For the avoidance of doubt,

- (i) Any reference to EGAT's Dispatch of the Facility provided in this Agreement shall be construed as EGAT's Dispatch of each Generating Unit that is Available at such time of Dispatch.
- (ii) If any Generating Unit is unable, solely due to the Generator, to process the Automatic Generation Control (AGC) or the Automatic Generation Voltage Control (AGVC) signal issued by EGAT, as applicable, and such inability to comply continues for more than twenty-four (24) hours, such Generating Unit shall be deemed to be Unavailable during the period for which it is so unable to comply in excess of twenty-four (24) hours for the purpose of the determination of Final Declaration. The relevant Unavailability Period in connection therewith shall be associated with a Pre Declared Unavailability. The determination of electrical energy that is deemed to have been delivered to the EGAT System in respect of such Generating Unit either during such period of AGC

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failure or during such period when EGAT instructs the Generator to turn off the AGC function shall be in accordance with Paragraph 4 of Part II of Schedule 7.

- (iii) The primary frequency regulation of each Generating Unit shall always be on duty during the period that such Generating Unit is Available. EGAT shall have the right to request the Generator to change the setting of the governor droop from time to time during the Term within the range specified in Part II of Schedule 11.
- (iv) The active power output of any Generating Unit that is in response to the primary frequency regulation shall be deemed to have been Dispatched by EGAT.
- (v) The issuance of a Dispatch Instruction and the manner of Dispatch upon the issuance of a Dispatch Instruction shall comply with Prudent Utility Practice, the Grid Code and all applicable Laws.

### 3.8.2 Limitations in respect of EGAT's Dispatch

Subject to the information available to EGAT at the time of Dispatch regarding the relevant Machine Outage as Declared by the Generator for the relevant day, in respect of the generating capacity of each Generating Unit, being referred to at the Unit Metering Point for any Settlement Period and in respect of any Daily Generation Program or actual Dispatch, EGAT may Dispatch:

- (a) subject to Section 3.8.2(b) below, up to but not exceeding the Registered XYB Unit Maximum Capacity as Declared in the relevant Derived Declaration; and
- (b) with respect to an Incremental Capacity Period comprised in a relevant day on and after the One Unit Operation Ready Date, up to but not exceeding the relevant Incremental Capacity; provided further that the total amount of electrical energy Dispatched by EGAT for the entire twenty-four (24) hours of any given day shall not exceed the respective Daily Incremental Capacity Constraint.

### 3.8.3 Daily Generation Program

- (a) In respect of each day comprised in a Contract Year following the Commercial Operation Date, EGAT shall provide to the Generator a Daily Generation Program in respect of each Generating Unit that has been Commissioned, in such form and manner as is provided in the Grid Code via internet web page technology or by using another newly available technology.

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Such Daily Generation Program shall contain the indicative schedule to Dispatch the generating capacity and Energy Availability Declared by the Generator for the relevant day.

- (b) The Daily Generation Program shall observe the limitations on EGAT's Dispatch of each Generating Unit and/or the Facility set forth in Section 3.8.2, as determined on the basis of relevant information available to EGAT at the time of preparing such Daily Generation Program.
- (c) The Daily Generation Program shall in no way prejudice or restrict EGAT's right and flexibility to issue Dispatch Instruction to the Facility that may vary therefrom, as further provided in this Section 3.8.

#### 3.8.4 Outages and Unavailability in respect of the EGAT Transmission Facilities

##### (A) EGAT Transmission Facilities Outages

- (a) EGAT shall provide as soon as practicable to the Generator: (i) the scheduling of any EGAT Transmission Facilities Outage that is required in order to conduct any maintenance activity; and (ii) any revision thereof.
- (b) Table 20.4 of Part II of Schedule 20 sets out the cycle, duration and maintenance work for the planned maintenance of the EGAT Transmission Facilities that may affect the delivery of the electrical energy from the Generator System; and
- (c) EGAT shall notify the Generator as soon as practicable regarding the occurrence and the cessation of any EGAT Transmission Facilities Outage.

The Generator shall use its best effort to coordinate to the extent reasonably practicable the occurrence of any relevant Generator Planned Outage or Generator Maintenance Outage with the EGAT Transmission Facilities Outage.

##### (B) EGAT Affected Force Majeure Outage

In case an EGAT Affected Force Majeure Outage occurs:

- (a) the Weekly Force Majeure Dispatch Shortfall Energy for the relevant EGAT Affected FM Week shall be determined in accordance with paragraphs 2(a)(B) and 2(b)(B) of schedule 10; and

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- (b) the Weekly Supply of either Committed Energy Component for the relevant EGAT Affected FM Week shall be deducted by the relevant component comprised in such Weekly Force Majeure Dispatch Shortfall Energy.

### 3.8.5 Dispatch before, during and after an Unavailability Period

In respect of a given Generator System Outage,

- (a) in the event there is no notification regarding the change in the expected outage start time or the expected outage finish time of such Generator System Outage, EGAT shall be entitled to Dispatch any Energy Availability of the relevant Generating Unit during the period that is either:
  - (i) before the relevant Scheduled Outage Start Time or the relevant Notified Outage Start Time, as applicable; or
  - (ii) on and after the relevant Scheduled Outage Finish Time or the relevant Notified Outage Finish Time, as applicable;
- (b) in the event there is notification regarding the change in the expected outage start time or the expected outage finish time of such Generator System Outage, notwithstanding the definition and determination of Unavailability Period associated with such Generator System Outage, EGAT shall be entitled to Dispatch any Energy Availability of the relevant Generating Unit during the period that is either:
  - (i) before the new expected outage start time, regardless of whether it is earlier or later than the Original Outage Start Time; or
  - (ii) on and after the new expected outage finish time, regardless of whether it is earlier or later than the Original Outage Finish Time.

## 3.9 **Operation under Exceptional Circumstances**

### 3.9.1 System Emergency

- (a) The Generator shall comply with the relevant provisions of the Grid Code in respect of any System Emergency that may arise.
- (b) The Generator shall always comply with EGAT's Dispatch Instruction regarding System Emergency, as evidenced by stating that such Dispatch Instruction has been issued under

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System Emergency, provided that in the event that:

- (1) the frequency of the EGAT System stays within neither the normal frequency range nor the exceptional frequency range; or
- (2) the voltage of the EGAT System stays within neither the normal voltage range nor the exceptional voltage range; or
- (3) the negative phase sequence current exceeds the agreed limit,

all such ranges and limit being as stated in Paragraph 4 of Schedule 12, then the Generator shall not be required to comply with such Dispatch Instructions and the Facility shall not be required to remain in service.

For the avoidance of doubt, in the event that any Generating Unit is tripped due to the frequency, voltage or negative sequence current of the EGAT System exceeding the respective Design Limit of such Generating Unit as set forth in Paragraph 4.1 of Part II of Schedule 11:

- (i) the Generator shall not be liable to pay to EGAT any liquidated damages as a result of such tripping; and
- (ii) the Final Declaration for such month shall not be affected by the Unavailability associated with such tripping.

### 3.9.2 Operation when there is only one Generating Unit

In the event that some or all generating units are not in operation and only one Generating Unit is synchronized, there may be a need to trip one transmission circuit between the Loei 2 Substation and the Xayaburi Switchyard in order to maintain the voltage at all relevant locations to be within the respective ranges defined in Paragraph 4.1 of Part II of Schedule 11. The relevant monitoring and actions shall be under EGAT's control and responsibility.

Under such mode of operation:

- (a) the circuit breaker to be operated first shall be that located at the Xayaburi Switchyard;
- (b) if the second transmission circuit between the Loei 2 Substation and the Xayaburi Switchyard trips during such mode of operation, then:

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- (i) if the outage of such second transmission circuit is due to a fault in the EGAT Transmission Facilities or caused by system voltage problem, the Final Declaration shall not be affected by the associated Unavailability and the Generator shall not be liable to pay liquidated damages in respect of the Generator System Outage that occurs pursuant to such line outage; or
- (ii) if the outage of such second transmission circuit is due to a fault in the Generator System, the Final Declaration shall be reduced by the associated Unavailability and the Generator shall be liable to pay liquidated damages in respect of the Generator System Outage that occurs pursuant to such line outage.

3.9.3 Operation when there is only one Transmission Circuit between the Loei 2 Substation and the Xayaburi Switchyard other than Section 3.9.2

Other than pursuant to Section 3.9.2, in the event that one transmission circuit between the Loei 2 Substation and the Xayaburi Switchyard is out of service:

- (a) if the outage of such transmission circuit is due to a Generator System Outage or any cause attributable to the Generator, in the event that the Generator Declares that the Weekly Declared Capacity is higher than eight hundred (800) MW during such relevant Settlement Periods:
  - (i) Pre Declared Unavailability associated with such generating capacity that is in excess of eight hundred (800) MW in respect of the duration of such outage shall be deemed to occur for the purpose of determining the Adjusted Weekly PE Availability and Adjusted Weekly SE Availability as provided in Paragraphs 1.4.1 and 1.4.2 of Part II of Schedule 3, as applicable; and
  - (ii) the determination of Weekly Derived PE Availability and Weekly Derived SE Availability in respect of such Settlement Periods as provided in Paragraphs 2.3.3 and 2.3.4 of Part II of Schedule 3, respectively, shall be calculated on the basis of such the respective Daily Declared Capacity of the Facility;
- (b) if the outage of such transmission circuit is due to (1) an EGAT Transmission Facilities Outage; or (2) an EGAT System Characteristics Outage, the Final Declaration shall not be affected by such operation with only one transmission circuit;

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and

- (c) if the outage of such transmission circuit is due to either: (1) a Coordinated Line Maintenance Outage; or (2) certain cause that is unknown or not attributable to either the Generator or EGAT, then:
  - (i) the Generator shall not be liable to pay to EGAT any liquidated damages as a result of such transmission circuit outage; and
  - (ii) the Final Declaration for such week shall be deducted by the Unavailability associated with such generating capacity that is in excess of eight hundred (800) MW in accordance with Paragraph 3.3 of Part II of Schedule 3.

3.9.4 Accounting of Unavailability associated with Outages in respect of both Transmission Circuits between the Loei 2 Substation and the Xayaburi Switchyard

In the event that both transmission circuits between the Loei 2 Substation and the Xayaburi Switchyard are out of service:

- (a) if the outage of both transmission circuits is due to a Generator System Outage or any cause attributable to the Generator, depending on the prior notice time that the Generator informs EGAT of such outage:
  - (i) either Pre Declared Unavailability or Undeclared Unavailability associated with all Generating Units that are Declared to be Available in respect of the duration of such outage shall be deemed to occur for the purpose of determining the Final Declaration as provided in Schedule 3; and
  - (ii) a Generator Maintenance Outage, a Generator Short Notice Outage or a Generator Forced Outage in respect of the duration of such outage shall be deemed to occur and the Generator shall be liable to pay the respective liquidated damages to EGAT in accordance with Sections 9.6.4, 9.6.3 or 9.6.2, as applicable;
- (b) if the outage of both transmission circuits is due to an EGAT Transmission Facilities Outage or an EGAT System Characteristics Outage, the Final Declaration shall not be affected by such outage;
- (c) if the outage of both transmission circuits is due to a Thai Political Force Majeure (affecting EGAT or the Generator) or

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an EGAT Force Majeure, EGAT shall be responsible for paying Force Majeure Offset Amounts in accordance with Section 11.7.4 on a monthly basis for such months associated with the duration of such outage as follows:

- (i) in the event that the outage was caused by a Thai Political Force Majeure affecting EGAT or an EGAT Force Majeure, such Force Majeure Offset Amounts payable by EGAT to the Generator shall be calculated on the basis of the relevant Weekly Force Majeure Dispatch Shortfall Energy provided in Schedule 10; or
  - (ii) in the event that the outage was caused by a Thai Political Force Majeure affecting the Generator, such Force Majeure Offset Amounts payable by EGAT to the Generator shall be calculated on the basis of the relevant Weekly Force Majeure Unavailability provided in Schedule 10;
- (d) if the outage of both transmission circuits is due to a Lao Political Force Majeure (affecting EGAT or the Generator) or a Generator Force Majeure, the Generator shall be responsible for paying Force Majeure Offset Amounts in accordance with Section 11.8.4 on a monthly basis for such months associated with the duration of such outage as follows:
- (i) in the event that the outage was caused by a Lao Political Force Majeure affecting EGAT, such Force Majeure Offset Amounts payable by the Generator to EGAT shall be calculated on the basis of the relevant Weekly Force Majeure Dispatch Shortfall Energy provided in Schedule 10; or
  - (ii) in the event that the outage was caused by a Lao Political Force Majeure affecting the Generator or a Generator Force Majeure, such Force Majeure Offset Amounts payable by the Generator to EGAT shall be calculated on the basis of the relevant Weekly Force Majeure Unavailability provided in Schedule 10; and
- (e) if the outage of both transmission circuits occurs pursuant to either: (1) a Coordinated Line Maintenance Outage; or (2) certain cause that is unknown or not attributable to either the Generator or EGAT, in respect of the duration of such outage:
- (i) neither Party shall be liable for payment of Force Majeure Offset Amounts to the other Party;
  - (ii) the Generator shall not be liable to pay liquidated damages to EGAT in respect of such outage; and

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- (iii) the Final Declaration of the relevant week shall be adjusted in accordance with Paragraph 3.3 of Part II of Schedule 3.

### 3.10 Operation and Maintenance Matters

- 3.10.1 No later than three (3) Full Calendar Months prior to the Scheduled Connection Date, the Generator shall submit to EGAT (i) a notification as to whether the Generator or a third party is to operate and maintain the Generator System; and (ii) in the event that a third party is to be hired to operate and maintain the Generator System, the identity and qualifications of such third party (such third party being referred to as the “O&M Contractor”).
- 3.10.2 The appointment by the Generator of the O&M Contractor to operate and maintain the Generator System shall not relieve the Generator of any liability under this Agreement resulting from the act or omission of such person or from a breach by the Generator of any term or condition of this Agreement.
- 3.10.3 The appointment by EGAT of any contractor to operate and maintain the EGAT System shall not relieve EGAT of any liability under this Agreement resulting from the act or omission of such person or from a breach by EGAT of any term or condition of this Agreement.
- 3.10.4 In connection with the Generator System, the Generator shall procure that the Generator shall employ, whether directly or indirectly, only personnel who are adequately qualified and experienced for operating and monitoring the Generator System and for coordinating operations of the Generator System with the EGAT System.
- 3.10.5 In connection with the EGAT System, EGAT shall procure that EGAT shall employ, whether directly or indirectly, only personnel who are adequately qualified and experienced for operating and monitoring the EGAT System and for coordinating operations of the EGAT System with the Generator System.
- 3.10.6 The Generator shall procure that appropriate personnel are on duty at the Facility and EGAT shall procure that appropriate personnel of EGAT are on duty at the National Control Center and the Regional Control Center, at all times and in each case, twenty-four (24) hours a day and seven (7) days a week commencing on the One Unit Operation Ready Date.
- 3.10.7 Each Party shall provide to the other up-to-date details of names, positions, responsibilities, normal working times and working locations of:
- (a) in the case of the Generator, all such personnel that are

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employed by the Generator or the O&M Contractor (as appropriate) and are responsible for coordination of the operations of the Generator System with the EGAT System; or

- (b) in the case of EGAT, all such personnel that are employed by EGAT and are responsible for coordination of the operations of the EGAT System with the Generator System and/or directly involved in the Dispatch of the Generator System.

3.10.8 At least once in each calendar quarter, the Generator shall submit to EGAT a report summarizing all major maintenance work performed during the immediately preceding calendar quarter.

3.10.9 The Generator shall provide EGAT before the end of February of each Contract Year with a report summarizing the operations and maintenance activities of the immediately prior Contract Year.

### 3.11 Operating Records

3.11.1 Each Party shall keep complete and accurate records and all other data required by each of them for the purposes of the proper administration of this Agreement.

3.11.2 (a) Among other records and data required to be kept under this Section 3.11, the Generator shall maintain an accurate and up-to-date operating log at the Xayaburi power station with records of:

- (i) all readings and measurements taken by the Generator Metering System and the Water Measuring System;
- (ii) changes in its Operating Characteristics and incidents of Generator System Outages;
- (iii) all material and unusual conditions found, including during inspections of the Generator System conducted by the Generator; and
- (iv) the results of all Commissioning Testing, all Annual Testing and all Additional Testing conducted in accordance with Sections 2.10 and 2.11 and Schedule 17.

(b) Among other records and data required to be kept under this Section 3.11, EGAT shall maintain an accurate and up-to-date operating log at EGAT headquarter of:

- (i) all readings and measurements taken by the Loei 2 Metering System;

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- (ii) incidents of EGAT Transmission Facilities Outages and EGAT System Characteristics Outages;
  - (iii) all material and unusual conditions found, including during inspection of any relevant part of the EGAT System conducted by EGAT that have effects on the operation and maintenance of the Generator System; and
  - (iv) the results of all Commissioning Testing and relevant planned maintenance of the EGAT Transmission Facilities conducted in accordance with this Agreement.
- 3.11.3 All records and data shall be maintained for a minimum of sixty (60) Full Calendar Months after their occurrence, provided, however, that either Party shall be entitled to dispose of or destroy any such records and data maintained by it after such sixty (60) month period if it has given at least thirty (30) days prior written notice of such intention to the other Party and the other Party has not within such period notified the Party maintaining such records or data that it requires such records or data to be delivered to it instead, in which event, if it has, the Party maintaining such records or data shall deliver the same to the other Party at the other Party's cost.
- 3.11.4 Either Party shall have the right, upon giving reasonable prior written notice to the other Party and subject to due compliance with such reasonable safety and procedural requirements as may be stipulated by the other Party from time to time, to examine and, at its own expense, take copies of the records and data of the other Party required to be maintained under this Agreement at any time during normal office hours within the period such records and data are required hereunder to be maintained.

### 3.12 Provision of Imported Energy

- 3.12.1 EGAT shall at the Generator's request provide Imported Energy for Commissioning Testing, start up and testing of the Facility or any Generating Unit in accordance with Section 2.10.7.
- 3.12.2 On and after the Energization Date, in the event that the Generator does not deliver electrical energy to the Delivery Point (including the case when the Facility is completely shutdown), EGAT shall, subject to any operational requirements of the EGAT System, energize the Transmission Line from the Loei 2 Substation to the Xayaburi Switchyard, starting from the time when no electrical energy is delivered to the Delivery Point by the Generator.

The electrical energy in association with the line charging current for the portion of one transmission circuit from the Delivery Point to the

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Facility, estimated as three hundred (300) kW plus the electrical losses that occur in the line shunt reactor installed on such transmission circuit multiplied by the duration (in hours) of such event, shall be regarded as one type of Imported Energy and shall be for the Generator's account.

3.12.3 The provisions of Imported Energy under this Section 3.12 shall all be subject to following conditions:

- (a) any interruption or diminution of the availability of the EGAT System to generate or deliver electrical energy to the Generator System;
- (b) any fault or deficiency in the Common Interconnection Facilities during the relevant time; and
- (c) EGAT being satisfied as to the ability of the Generator System to meet the requirements regarding the Contracted Operating Characteristics.

### 3.13 Exclusivity of Supply

Commencing from the Commercial Operation Date until the end of the Term, the Generator shall not deliver or sell electrical energy generated from the Facility to any third party without the prior written approval of EGAT, regardless of: (i) the location of such third party; and (ii) whether or not there is utilization of the EGAT Transmission Facilities. EGAT may withhold approval of such sale at its sole discretion, or grant approval subject to whatever technical and/or commercial conditions as EGAT considers appropriate. The Generator's violation of this Section 3.13 shall be a Generator Event of Default in accordance with Section 10.2.1(o).

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#### 4. SALE AND PURCHASE OF ELECTRICAL ENERGY

##### 4.1 Classification of Electrical Energy into Energy Components

###### 4.1.1 Energy Components

- (a) In respect of each week after the Commercial Operation Date, both:
- (i) the amount of electrical energy that the Generator Declares to be Available pursuant to Section 3 and Schedule 3; and
  - (ii) the amount of electrical energy that is Dispatched by EGAT and delivered to the Delivery Point for the EGAT System pursuant to EGAT's Dispatch;

shall each comprises "**Primary Energy**", "**Secondary Energy**" and "**Excess Energy**".

- (b) Primary Energy, Secondary Energy and Excess Energy are referred to in this Agreement as "**Energy Components**".
- (c) The determination of Energy Components that are comprised in the amount of electrical energy that is Declared to be Available by the Generator and the amount of electrical energy that is delivered to the Delivery Point for the EGAT System pursuant to EGAT's Dispatch are respectively provided in Schedules 3 and 4 and the tariff applicable thereto is provided in Schedule 2.
- (d) The tariff rate and the conditions associated with sale and purchase of electrical energy for a given week shall vary for each of such Energy Components in accordance with this Agreement.

###### 4.1.2 Committed Energy

In respect of a week after the Commercial Operation Date, the "**Committed Energy**" that the Generator Declares to be Available for any week shall be defined as the aggregate amounts of Primary Energy and Secondary Energy that the Generator Declares to be Available, as applicable, corresponding to the Final PE Availability and the Final SE Availability for that week.

The values of Final PE Availability and/or Final SE Availability in each case shall be calculated in accordance with Paragraph 3.3 of Part II of Schedule 3.

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#### 4.1.3 Excess Energy

In respect of a week after the Commercial Operation Date, the Excess Energy that the Generator Declares to be Available for any week shall be defined as the Final EE Availability for that week.

The values of Final EE Availability shall be calculated in accordance with Paragraph 3.3 of Part II of Schedule 3.

### 4.2 **Sale and Purchase of Electrical Energy prior to the Commercial Operation Date**

#### 4.2.1 Sale of Test Energy that occurs prior to the Commercial Operation Date

Prior to the Commercial Operation Date, EGAT shall Dispatch and pay for the amount of Test Energy that occurs during Commissioning Testing in accordance with Section 2.10.6 at the Test Energy Tariff. The term Test Energy referred to in this Agreement shall include:

- (a) such amount of electrical energy that occurs pursuant to any test requested to be performed by the Generator; and/or
- (b) such amount of electrical energy generated by any Commissioned Units that occurs under the circumstances that such Commissioned Units are required to be Dispatched in order to carried out the relevant Commissioning Testing.

#### 4.2.2 Energy Sale during the Unit Operation Period

- (a) No later than 10 a.m. of the immediately preceding day during the Unit Operation Period, the Generator shall declare the total energy availability in respect of the Commissioned Unit(s) of the relevant day. The “**Unit Operation Energy**” shall be defined as the electrical energy that is declared by the Generator and delivered to the Delivery Point for the EGAT System pursuant to EGAT’s Dispatch in respect of any and all such Commissioned Unit(s) during the Unit Operation Period, which shall be separated into Unit Primary Energy, Unit Secondary Energy and Unit Excess Energy in proportional to 57:24:19. EGAT shall purchase such Unit Operation Energy at EGAT’s discretion.
- (b) EGAT shall pay for all Unit Primary Energy, Unit Secondary Energy and Unit Excess Energy at the respective energy tariff provided in Paragraph 2.2 of Schedule 2.

4.2.3 During the Unit Operation Period, the electrical energy delivered by

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the Generator to the Delivery Point for the EGAT System in each week shall include Test Energy, Unit Primary Energy, Unit Secondary Energy and Unit Excess Energy respectively provided in Sections 4.2.1 and 4.2.2, which shall be measured and calculated in accordance with Paragraphs 2 and 3 of Part II of Schedule 7, respectively.

#### 4.3 Purchase Obligation and Dispatch Right on and after the Commercial Operation Date

- (a) In respect of a given week after the Commercial Operation Date, subject to the terms and conditions of this Agreement (including Section 4.8), EGAT shall purchase the Committed Energy comprised in the Final Declaration in respect of all relevant weeks or portion thereof comprised in such month, as determined in accordance with this Agreement.

Regarding such obligation,

- (i) EGAT shall pay Monthly Energy Payment to the Generator determined in accordance with Section 5 and Schedule 5; and
- (ii) EGAT shall have the right to Dispatch the Facility in accordance with this Agreement, including such right to Dispatch the Accumulated Dispatch Shortfall Energy for Make-Up purposes in accordance with Section 4.5.
- (b) Subject to Section 4.6, any shortfall of EGAT's Dispatch compared to the Committed Energy for a given week as calculated in accordance with Paragraph 3(a)(A) of Schedule 4 shall be defined as the "**Weekly Dispatch Shortfall Energy**", which shall be accumulated into the "**Dispatch Shortfall Energy Account**" without distinguishing between the Committed Energy Components that constitute such Monthly Dispatch Shortfall Energy. The balance of the Dispatch Shortfall Energy Account shall be updated in accordance with this Agreement and the updated balance of the Dispatch Shortfall Energy Account at a given point of time shall be defined as the "**Accumulated Dispatch Shortfall Energy**".
- (c) EGAT shall have the right to Make-Up, in accordance with Section 4.5, part or all of the Accumulated Dispatch Shortfall Energy in the subsequent months up to the end of the Term. After purchasing all Committed Energy for a given week, EGAT may either purchase the Excess Energy Declared for such week or exercise its Make-Up rights in stead.
- (d) For a given week during which the Generator declares Daily Additional Energy Availability for some or all of the days comprised in such week, EGAT may either purchase part or all of the electrical energy delivered to the Delivery Point for the EGAT System pursuant to EGAT's Dispatch that is in excess of the Final Total Availability for the relevant week (the "**Weekly Additional Energy**") or exercise its

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Make-Up rights in stead. In the event that EGAT elects to purchase Weekly Additional Energy, EGAT shall pay for such Weekly Additional Energy by paying the Monthly Energy Payment determined in accordance with Section 5 and Schedule 5.

- (e) EGAT shall have the right, but no obligation, to Dispatch and purchase part or all of the Excess Energy in any week. In the event that EGAT decides that it wishes to purchase Excess Energy declared for a given week, EGAT shall pay for such Excess Energy by paying the Monthly Energy Payment determined in accordance with Section 5 and Schedule 5. The payment due from EGAT for such Excess Energy that has been Dispatched in any month shall be defined as the “**Monthly Excess Revenue**”, which shall be accumulated into the “**Excess Revenue Account**”.
- (f) EGAT shall pay the Generator at the Test Energy Tariff for the amount of Test Energy that occurs during the Annual Testing and the Additional Testing in accordance with Section 2.11.6, including for the amount of electrical energy that occurs pursuant to any test requested to be performed by the Generator, as calculated in accordance with Paragraph 2 of Part II of Schedule 7.

#### 4.4 Conditions in respect of Supply and Purchase on and after the Commercial Operation Date

##### 4.4.1 Settled Energy Limit and Annual Supply Target

(a) Settled Energy Limit

In respect of the period comprising Relevant Period 1 and Relevant Period 2, the total amount of Monthly Settled Energy for each Committed Energy Component shall be limited to the “**Settled Energy Limit One**” of that Committed Energy Component.

In respect of the period comprising Relevant Period 3 and Relevant Period 4, the total amount of Monthly Settled Energy for each Committed Energy Component shall be limited to the “**Settled Energy Limit Two**” of that Committed Energy Component.

In respect of the period comprising Relevant Period 5 and Relevant Period 6, the total amount of Monthly Settled Energy for each Committed Energy Component shall be limited to the “**Settled Energy Limit Three**” of that Committed Energy Component.

Each of Settled Energy Limit One, Settled Energy Limit Two and Settled Energy Limit Three shall be determined in

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accordance with Paragraphs 4(a), 4(b) and 4(c) of Part I of Schedule 1, respectively. The respective sum of all Monthly Supply in respect of PE and SE over the respective period relating to each of Settled Energy Limit One, Settled Energy Limit Two and Settled Energy Limit Three that is in excess of the corresponding Settled Energy Limit shall be converted into Excess Energy at the end of such respective period associated and in accordance with the reconciliation process provided in Section 5.2.3(a) and Paragraph 4(a) of Schedule 5.

(b) Annual Supply Target for a Contract Year

For the purpose of determining each Settled Energy Limit and the Annual Settled Energy Target, the “**Annual Supply Target**” in respect of each Committed Energy Component and for a given Contract Year shall be defined as follows:

- (i) For such Contract Year that is a full calendar year and all seven (7) Generating Units have been Commissioned on or before 1 January of such Contract Year

The Annual Supply Target in respect of each Committed Energy Component for such Contract Year shall be as specified in the following table, provided that in respect of any Contract Year during which a Force Majeure affects either or both of the Parties, the corresponding Annual Supply Target for such Contract Year shall be deducted on pro rata basis taking into account the number of days comprised in that Contract Year associated with such Force Majeure.

Committed Energy Component	Annual Supply Target
Primary Energy	4,299 GWh
Secondary Energy	1,410 GWh

- (ii) For all other Contract Years

The Annual Supply Target in respect of each Committed Energy Component for such Contract Year and, in the event that the Scheduled Termination Date is extended in accordance with Section 8.1.2(f), the Total 29-Year Related FM Extended Period, shall be defined as the amount of electrical energy that is determined on the basis of the respective portions of such Contract Year or the duration of the Total-29 Year Related FM Extended Period, as applicable, that are associated with the corresponding Commissioned Units in accordance

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with Paragraph 3 of Part I of Schedule 1.

The Annual Supply Targets shall not impose any restriction on the Generator's Declarations in any particular Contract Year.

In respect of a given Contract Year,

- (1) the Annual Supply Target in respect of Primary Energy defined in Sections 4.4.1(b)(i) or 4.4.1(b)(ii) shall be defined as the “**Annual PE Supply Target**”; and
- (2) the Annual Supply Target in respect of Secondary Energy defined in Sections 4.4.1(b)(i) or 4.4.1(b)(ii) shall be defined as the “**Annual SE Supply Target**”.

#### 4.4.2 Annual Settled Energy Target and Monthly Settled Energy Target

##### (a) Annual Settled Energy Target

In respect of each Committed Energy Component, the “**Annual Settled Energy Target**” shall be defined as follows:

- (i) for any given Contract Year other than the first Contract Year, the sum of the respective Annual Supply Target for such Contract Year and the respective Accumulated Supply Shortfall Energy as at the end of the previous Contract Year; and
- (ii) for the first Contract Year, the respective Annual Supply Target for such first Contract Year;

as further provided in Paragraph 2(a) of Schedule 4.

##### (b) Monthly Settled Energy Target

In respect of each Committed Energy Component and a given month comprised in a Contract Year, the “**Monthly Settled Energy Target**” shall be defined as the Annual Settled Energy Target for such Contract Year (in GWh) deducting an amount equal to the sum of the Monthly Supply for all preceding months of such Contract Year, as further provided in Paragraph 2(b) of Schedule 4.

#### 4.4.3 Weekly Supply, Monthly Supply and Monthly Settled Energy

##### (a) Weekly Supply

In respect of each Committed Energy Component and a given week comprised in a Contract Year, the “**Weekly Supply**”

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shall be defined as:

- (i) for a week that is not an EGAT Affected FM Week, the sum of the relevant Final Declaration and the corresponding amount of Committed Energy Component comprised in the Weekly Additional Energy for such week; or
- (ii) for a week that is an EGAT Affected FM Week, the relevant Final Declaration:
  - (aa) plus the corresponding amount of Committed Energy Component comprised in the Weekly Additional Energy for such week; or
  - (bb) less the corresponding amount of Committed Energy Component comprised in the Weekly Force Majeure Dispatch Shortfall Energy for such week;

the calculation for either case is further provided in Paragraphs 1(a)(i) and 1(i)(ii) of Schedule 4, respectively.

For the avoidance of doubt, the determination of the amount of Weekly Supply and each Committed Energy Component comprised therein shall not depend on:

- (1) the proportion of EGAT's Dispatch in respect of the PE Period and the SE Period comprised in such week; and
- (2) the level of generating capacity that EGAT Dispatches the Facility in respect of any and all Settlement Periods comprised in such week.

The Weekly Supply in respect of the Excess Energy and a given week comprised in a Contract Year, shall be defined as the sum of the Weekly Excess Energy and the Weekly Additional Excess Energy for such week;

(b) Month End Supply

In respect of each Energy Component and a given month comprised in a Contract Year, the “**Month End Supply**” shall be defined as the portion of the Monthly Supply of such given month in respect of the Month End Period of such month, as further provided in Paragraph 1(b) of Schedule 4.

(c) Month Start Supply

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In respect of each Energy Component and a given month comprised in a Contract Year, the “**Month Start Supply**” shall be defined as the Weekly Supply for such Energy Component for the Overlapping Week associated with the beginning part of the given month less the Month End Supply for such Energy Component of the immediately preceding month, as further provided in Paragraph 1(c) of Schedule 4.

(d) Monthly Supply

In respect of each Energy Component and a given month comprised in a Contract Year, the “**Monthly Supply**” shall be defined as the sum of: (i) all Weekly Supply for all Non Overlapping Weeks comprised in such month; (ii) the relevant Month Start Supply for such month; and (iii) the relevant Month End Supply for such month, all in respect of the relevant Energy Component, as further provided in Paragraphs 1(d) of Schedule 4.

(e) Monthly Settled Energy

In respect of each Committed Energy Component and a given month comprised in a Contract Year, the “**Monthly Settled Energy**” shall be defined as the lesser of the Monthly Supply and the Monthly Settled Energy Target for such month, as further provided in Paragraph 1(a) of Schedule 5.

#### 4.5 **Make-Up of Accumulated Dispatch Shortfall Energy**

After the occurrence of Weekly Dispatch Shortfall Energy, EGAT shall be entitled, in any subsequent week of the Term, to Make-Up the Accumulated Dispatch Shortfall Energy at EGAT’s own discretion after EGAT has Dispatched all of the Generator’s Final Declaration for all Committed Energy for that week, in substitution to the purchase of either Weekly Excess Energy or Weekly Additional Energy, as applicable, as provided in Sections 4.3(c) and 4.3(d). The amount of electrical energy that is Dispatched by EGAT for Make-Up purpose shall be respectively defined as the “**Weekly First Make-Up Energy**” and “**Weekly Second Make-Up Energy**”, which shall be determined in accordance with Paragraphs 4(a) and 5(a) of Schedule 4.

The Generator shall use its best effort to enhance EGAT’s chances to Make-Up the Accumulated Dispatch Shortfall Energy, including but not limiting to maximizing the Availability of the Facility.

#### 4.6 **Purchase Obligation during an EGAT Affected FM Week**

In respect of an EGAT Affected FM Week, EGAT’s obligation to purchase the Committed Energy Declared for the relevant week shall be suspended to the extent of the Weekly Force Majeure Dispatch Shortfall Energy that occurs

in such month determined in accordance with Paragraphs 2(a)(B) and 2(b)(B) of Schedule 10; and:

- (a) EGAT shall have no liability to make Monthly Energy Payment to the Generator in respect of such Weekly Force Majeure Dispatch Shortfall Energy; and
- (b)
  - (i) EGAT shall pay Force Majeure Offset Amounts to the Generator determined in accordance with Section 11.7.4 and Paragraphs 2(b)(B) and 2(c) of Schedule 10, as applicable, for each Committed Energy Component comprised in such Weekly Force Majeure Dispatch Shortfall Energy, if such EGAT Affected Force Majeure Outage is caused by an EGAT Force Majeure or a Thai Political Force Majeure; or
  - (ii) The Generator shall pay Force Majeure Offset Amounts to EGAT determined in accordance with Section 11.8.4 and Paragraph 2(b)(B) of Schedule 10 for each Committed Energy Component comprised in such Weekly Force Majeure Dispatch Shortfall Energy, if such EGAT Affected Force Majeure Outage is caused by a Lao Political Force Majeure.

#### 4.7 Transmission Loss

- (a) The Transmission Loss incurred on the Thailand side of the Delivery Point in respect of the transmission of electrical energy between the Generator System and the EGAT System shall be for EGAT's account. The Transmission Loss incurred on the Lao PDR side of the Delivery Point in respect of the transmission of electrical energy between the Generator System and the EGAT System shall be for the Generator's account.
- (b) The effect of the Transmission Loss upon the determination of the Gross Electrical Energy is provided in Paragraph 1 of Part II of Schedule 7.
- (c) The Parties shall keep records on the number of transmission circuit(s) between the Xayaburi Switchyard and the Loei 2 Substation that is or are in service and the causes of the outage, as applicable, during each relevant Settlement Period.

#### 4.8 Title and Risk of Loss

Title to and risk of loss for Gross Electrical Energy shall pass from the Generator to EGAT and title to and risk of loss for Imported Energy shall pass from EGAT to the Generator, in each case, at the Delivery Point.

#### 4.9 Clearing the Dispatch Shortfall Energy Account before the end of the Term

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In respect of each week comprised in the MU-AD Period, EGAT shall have no obligation to Dispatch or purchase any quantity of electrical energy Declared by the Generator for such week and:

- (a) the Generator shall make Weekly Declaration and Derived Declaration as set out in the Paragraphs 1.2 and 1.4 of Part I of Schedule 3, such Weekly Declaration and Derived Declaration to be made in consistency with and in compliance with Section 3.2.2;
- (b) there shall be no determination of the Final Declaration and, subject to Section 4.9(c), the values of the Final PE Availability, the Final SE Availability and the Final EE Availability as referred to in Paragraph 3.3 of Part II of Schedule 3 shall be defined as zero (0);
- (c) the Weekly Declared EC Percentage shall be determined as set out in Paragraph 5 of Part II of Schedule 3, provided that: (i) the values of the Final PE Availability, the Final SE Availability and the Final EE Availability to be used for such purposes shall each be equal to four thousand two hundred and ninety-nine (4,299), one thousand four hundred and ten (1,410) and one thousand two hundred and twenty (1,220), respectively; and (ii) the Weekly Declared Additional EC Percentage for each Energy Component shall be equal to the corresponding Weekly Declared EC Percentage of the same Energy Component;
- (d) subject to Section 4.9(II), the Weekly Supply of Primary Energy, the Weekly Supply of Secondary Energy and the Weekly Supply of Excess Energy shall be determined as set out in Paragraph 1(a) of Schedule 4;
- (e) the Monthly Supply of Primary Energy, the Monthly Supply of Secondary Energy and the Monthly Supply of Excess Energy shall be determined as set out in Paragraph 1(d) of Schedule 4;
- (f) the Monthly Settled Energy Targets in respect of Primary Energy and Secondary Energy shall be determined as set out in Paragraph 2(b) of Schedule 4;
- (g) the Weekly Dispatch Shortfall Energy and the Weekly Dispatch Shortfall Payment shall be equal to zero (0), and all Net Electrical Energy shall be equal to Weekly Pre Make-Up Additional Energy, all of which are consistent with Paragraph 3(a) of Schedule 4 with the values of the Final PE Availability, the Final SE Availability and the Final EE Availability being zero (0) in accordance with Section 4.9(b);
- (h) the Weekly Second Make-Up Energy and the Weekly Additional Energy shall be determined as set out in Paragraphs 5(a) and 5(c) of Schedule 4, pursuant to such determination the Dispatch Shortfall Energy Account and the Dispatch Shortfall Payment Account shall be updated as set out in Paragraph 4(b) of Schedule 4;

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- (i) the Energy Components comprised in the Weekly Additional Energy shall be determined as set out in Paragraph 5(d) of Schedule 4, and the amount of Weekly Additional Primary Energy and Weekly Additional Secondary Energy comprised in the Weekly Additional Energy shall be recorded and accumulated, for each week of such MU-AD Period, into an Additional Energy Account in the same manner as the establishment of the Dispatch Shortfall Energy Account;
- (j) the Monthly Excess Revenue shall be determined as set out in Paragraph 1(b) of Schedule 5 and the updating of the Excess Revenue Account shall be determined as set out in Paragraph 1(c) of Schedule 5;
- (k) the Monthly Supply Excess Energy and the Monthly Supply Excess Payment shall be determined as set out in Paragraphs 6(a) and 6(b) of Schedule 4, and the components of the Annual Supply Shortfall Energy shall be determined as set out in Paragraph 6(c) of Schedule 4; and
- (l) the Monthly Energy Payment shall be determined as set out in Paragraph 3 of Schedule 5.

In respect of the MU-SO Period, the same terms and conditions of this Agreement that are applicable to the Declaration by the Generator and to the purchase by EGAT during the period before the MU-AD Period shall apply and:

- (I) in the event that the balances of the Dispatch Shortfall Energy Account and the Dispatch Shortfall Payment Account at the end of the MU-AD Period are greater than zero (0), EGAT shall be entitled to Make-Up the Accumulated Dispatch Shortfall Energy that remains outstanding at the end of each week during such MU-SO Period or at the end of the Term as provided in Paragraphs 4(a) and 5(a) of Schedule 4; or
- (II) in the event that the balance of the Additional Energy Account at the end of the MU-AD Period is greater than zero (0), EGAT shall be entitled to use the updated balance of such Additional Energy Account to set off with any Weekly Dispatch Shortfall Energy that occurs at the end of each week during such MU-SO Period or at the end of the Term. Such amount of electrical energy that has been set off shall be distributed to Primary Energy and Secondary Energy using the Weekly Declared PE Percentage and the Weekly Declared SE Percentage, and the Weekly Supply for each respective Committed Energy Component for the relevant week (or any part thereof for the last week of the Term) shall be deducted by the corresponding Committed Energy Component of the amount of electrical energy that has been set off prior to being used for the determination of the Monthly Energy Payment in accordance with Schedule 5.

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At the end of the Term a reconciliation of accounts and an adjustment for the determination of the Monthly Energy Payment shall be performed in the manner as set out in Paragraph 4 of Schedule 5.

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## 5. ENERGY PAYMENTS

### 5.1 Monthly Energy Payment prior to the Commercial Operation Date

#### 5.1.1 Monthly Energy Payment prior to the One Unit Operation Ready Date

In respect of each month comprised in the period commencing from (and including) the date of the issuance of the first in time Certificate of Readiness for Energization until (but excluding) the One Unit Operation Ready Date, EGAT shall pay to the Generator an amount of monthly energy payment in respect of the Test Energy for the relevant month, at the Test Energy Tariff.

#### 5.1.2 Monthly Energy Payment during the Unit Operation Period

In respect of each month comprised in the period commencing from (and including) the One Unit Operation Ready Date until (but excluding) the Commercial Operation Date, EGAT shall pay to the Generator an amount of monthly energy payment comprising:

- (a) payment in respect of the Test Energy for the relevant month, at the Test Energy Tariff; and
- (b) payment in respect of the Unit Primary Energy, Unit Secondary Energy and Unit Excess Energy for the relevant month, at the respective Unit Primary Energy Tariff, Unit Secondary Energy Tariff and Unit Excess Energy Tariff.

### 5.2 Monthly Energy Payment commencing from the Commercial Operation Date

Notwithstanding EGAT's obligation to purchase such amount of Committed Energy comprised in the Generator's Final Declaration made to EGAT during the period commencing from the Commercial Operation Date, in respect of each month comprised in a Contract Year, subject to Section 17.9 or as otherwise provided in this Agreement, any and all payment obligations owed to the Generator on the part of EGAT in the respective month pursuant to Section 4.3 shall be satisfied in full by the payment to the Generator of the amount determined in accordance with Paragraphs 3 and 5 of Schedule 5, as applicable (such amount being referred to as the "**Monthly Energy Payment**").

#### 5.2.1 Determination of Monthly Base Energy Payment

The basic component of each Monthly Energy Payment is the "**Monthly Base Energy Payment**", which shall comprise the following components:

- (a) subject to the Monthly Settled Energy Target, payment in respect of each Committed Energy Component comprised in

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the Monthly Supply for the relevant month at the applicable PE Tariff and SE Tariff for the relevant month;

- (b) payment in respect of the Excess Energy for the relevant month at the Excess Energy Tariff; and
- (c) payment in respect of the Test Energy for the relevant month, at the Test Energy Tariff.

Details regarding calculation of Monthly Base Energy Payment are provided in Paragraph 1(b) of Schedule 5.

5.2.2 Adjustment for the determination of the Monthly Energy Payment pursuant to Set Off of Annual Supply Shortfall Energy against the corresponding Accumulated Supply Excess Energy

In respect of the last month of each Contract Year, the determination of the Monthly Energy Payment for such month shall include an increase (to be applied after the determination of the Monthly Base Energy Payment), such increase being equal to the respective portions of the Accumulated Supply Excess Primary Energy and the Accumulated Supply Excess Secondary Energy that have been set off against the Annual Supply Shortfall Primary Energy and the Annual Supply Shortfall Secondary Energy, respectively, in accordance with Paragraph 7 of Schedule 4, at the applicable Supply Excess PE Tariff and Supply Excess SE Tariff defined in Paragraph 6(b) of Schedule 4. The calculation of such increase due to this Section 5.2.2 shall be in accordance with Paragraph 2(a) of Schedule 5.

5.2.3 Reconciliation of Accounts and Adjustment for the determination of the Monthly Energy Payments for the last Month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term

In respect of the last month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term, notwithstanding any other provision in this Agreement to the contrary, the Supply Excess PE Account, the Supply Excess SE Account and the Dispatch Shortfall Energy Account shall be reconciled with the Excess Revenue Account; and the determination of the Monthly Energy Payment shall, after any applicable adjustment pursuant to Section 5.2.2, be further adjusted as follows:

- (a) first, the sum of the balances of the Supply Excess PE Account and the Supply Excess SE Account shall be considered as Excess Energy and the determination of the Monthly Energy Payment due for such month shall include an increase being equal to such amount of Excess Energy converted therefrom times the Excess Energy Tariff and the Excess Revenue Account shall be adjusted accordingly;

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- (b) second, the balance of the Dispatch Shortfall Payment Account shall set off with the balance of the Excess Revenue Account that has been adjusted in accordance with Section 5.2.3(a), and the determination of the Monthly Energy Payment due for such month shall include a deduction being equal to such portion of Dispatch Shortfall Payment Account that has been set off; and
- (c) third, the determination of the Monthly Energy Payment due for such month shall finally include a deduction being equal to twenty-five percent (25%) of the final balance of the Excess Revenue Account that has been adjusted in accordance with Sections 5.2.3(a) and 5.2.3(b).

The calculation of such increase and deductions due to this Section 5.2.3 shall be in accordance with Paragraph 5 of Schedule 5.

In respect of the last month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term, in the event the Monthly Energy Payment determined in accordance with Paragraph 5 of Schedule 5 is a negative number, the Generator shall reimburse an amount equal to the absolute value of such Monthly Energy Payment to EGAT.

### 5.3 Energy Tariff and Currency of Energy Payment

5.3.1 Schedule 2 sets forth the procedures to determine the applicable tariff rates for each Energy Component during different periods of the Term.

5.3.2 (i) The Test Energy Tariff as provided in Schedule 2 shall be applied for the purchase by EGAT of the Test Energy that occurs pursuant to Sections 2.10.6 and 2.11.6.

(ii) The Excess Energy Tariff as provided in Schedule 2 shall be applied for the purchase by EGAT of the Excess Energy, including such amounts of electrical energy that correspond to the sum of the balances of the Supply Excess PE Account and the Supply Excess SE Account that are considered as Excess Energy upon reconciliation at the end of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term in accordance with Section 5.2.3(a).

#### 5.3.3 Currency of Energy Payment

(a) All payments for Secondary Energy, Excess Energy and Test Energy shall be paid in Thai Baht.

(b) Subject to Section 7.3(a) and other than as set out in Section 5.3.3(c), the payment for Primary Energy comprised in each Monthly Energy Payment referred to in Sections and 5.2

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denominated in US Dollars and Thai Baht shall be made in the respective currencies.

- (c) In respect of that portion of the Monthly Energy Payment constituted by the amount attributable to the set off of the Annual Supply Shortfall Energy against the Accumulated Supply Excess Energy at the end of each Contract Year pursuant to Section 5.2.2, as determined in accordance with Paragraph 2(a) of Schedule 5, subject to Section 7.3(a), the currency of payment for the Primary Energy comprised therein shall be as follows:
- (i) The first fifty per cent (50%) of such adjustment shall be paid in Thai Baht.
  - (ii) The remaining fifty per cent (50%) of such adjustment shall be converted to US Dollar by using the Reference Exchange Rate and paid in US Dollar.

#### 5.4 Payment in respect of Imported Energy

- 5.4.1 The Generator shall pay for the Imported Energy referred to in Section 3.12 on a monthly basis in accordance with Schedule 4.
- 5.4.2 The determination of Imported Energy provided in Section 5.4.1 shall be based on metered values recorded by the Loei 2 Metering System and the Xayaburi Metering System, being referred to at the Delivery Point.
- 5.4.3 Statements and payments under Section 5.4.1 shall be made in accordance with Sections 6 and 7.

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**6. STATEMENTS****6.1 Confirmation of Information to be used for the Preparation of Generator Payment Invoices**

Commencing from the Connection Date, the Generator shall, on the date that is no later than the third (3<sup>rd</sup>) Business Day after the end of the period to which it relates, deliver to EGAT:

- (a) a daily written statement (the “**Generator Daily Confirmation Statement**”) and the associated Generator Daily Metering Statement, both being issued in accordance with Schedule 28 confirming, in respect of each Settlement Period of the relevant day, where applicable, the information that would be used for the preparation of the Generator Weekly Confirmation Statement in respect of the relevant week, including such information related to the Declaration, the electrical energy delivered to the Delivery Point for the EGAT System and Unavailability; and
- (b) a weekly written statement (the “**Generator Weekly Confirmation Statement**”) being issued in accordance with Schedule 28 confirming, in respect of the relevant week, where applicable, the information that would be used for the preparation of the Generator Payment Invoice in respect of such week, including such information related to the Declaration, the electrical energy delivered to the Delivery Point for the EGAT System and Unavailability.

**6.2 Confirmation of Information to be used for the Preparation of EGAT Payment Invoices**

Commencing from the Connection Date, EGAT shall, on the date that is no later than the third (3<sup>rd</sup>) Business Day after the end of the period to which it relates, deliver to the Generator:

- (a) a daily written statement (the “**EGAT Daily Confirmation Statement**”) and the associated EGAT Daily Metering Statement, both being issued in accordance with Schedule 28 confirming, in respect of each Settlement Period of the relevant day, where applicable, the information that would be used for the preparation of the EGAT Monthly Confirmation Statement in respect of the relevant month, including such information related to the Imported Energy and any Generator Unplanned Outage; and
- (b) a monthly written statement (the “**EGAT Monthly Confirmation Statement**”) being issued in accordance with Schedule 28 confirming, in respect of the relevant month, where applicable, the information that would be used for the preparation of the EGAT Payment Invoice in respect of such month, including such information related to the Imported Energy and any Generator Unplanned Outage;

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provided that EGAT may at its own discretion elect to deliver to the Generator only the EGAT Monthly Confirmation Statement in respect of any given month.

### 6.3 Access to Information

If available and as applicable, any Party shall provide such information as the other Party may reasonably request in order to either:

- (a) verify a Confirmation Statement, a Daily Metering Statement or a Meter Reconciliation Statement; or
- (b) aid in the preparation of a Confirmation Statement, a Daily Metering Statement or a Meter Reconciliation Statement,

provided that such information is not readily available to such other Party by any other means.

### 6.4 Review and Approval of Confirmation Statements and Meter Reconciliation Statements

6.4.1 (a) EGAT shall review each statement referred to in Section 6.1 and, if applicable, any Meter Reconciliation Statement prepared by the Generator pursuant to Section 2.7.6(a), and shall notify the Generator in writing of any errors or omissions EGAT disputes and considers should be corrected up to the date that is the later of: (i) seventeen (17) Business Days after the end of the relevant month; and (ii) fourteen (14) Business Days after receipt of all Generator Weekly Confirmation Statement in respect of all of the Non Overlapping Week of the given month.

(b) The Generator shall review each statement referred to in Section 6.2, and shall notify EGAT in writing as soon as practicable and in any event for each case within fourteen (14) Business Days after receipt of each such statement of any errors or omissions the Generator disputes and considers should be corrected.

(c) Meter Readings established in accordance with Part III of Schedule 14 shall not be invoked by either Party as grounds for a disputed amount. Any adjustment of any related amount in respect of such Meter Readings shall occur pursuant to the issuance of the relevant Meter Reconciliation Statement.

6.4.2 (a) In the event either Party notifies the other of any errors or omissions on any relevant statement in accordance with Sections 6.4.1(a) or 6.4.1(b), as applicable, the Parties shall use their best efforts to agree on the correction of such errors or omissions and to resolve this and all related items associated with or affected by such correction to their mutual satisfaction

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within fourteen (14) Business Days after such statement has been received, such agreement or resolution to be recorded in writing for the purpose of Section 6.5.

- (b) If the Parties fail to agree pursuant to Section 6.4.2(a):
- (i) Section 13.1.2 shall apply in respect of any item of the statement which remains in dispute; and
  - (ii) the remaining information contained in such statement, to the extent that it has not been disputed by the Party that reviewed it, shall be deemed to be having been approved by both Parties on the fifteenth (15<sup>th</sup>) Business Day after such statement has been received.

6.4.3 Unless the Party which received the relevant statement has notified the other of such error or omission in such statement which such Party disputes and considers should be corrected pursuant to and in accordance with Sections 6.4.1(a) or 6.4.1(b), as applicable, the information contained in such statement shall, save in the case of fraud or manifest error and subject to Section 6.7, be deemed to have been approved by the Party which received such statement on the fifteenth (15<sup>th</sup>) Business Day after such statement has been received.

#### 6.5 Final Confirmation Statements

A final confirmation statement (the “**Final Confirmation Statement**”) shall be constituted by:

- (i) any Generator Weekly Confirmation Statement, EGAT Monthly Confirmation Statement, or Meter Reconciliation Statement or any part thereof which either:
  - (A) has been agreed to by the Parties pursuant to Section 6.4.2(a); or
  - (B) is deemed to have been approved by the Parties pursuant to Section 6.4.2(b)(ii); or
  - (C) is deemed to have been approved by the Party that receives such statement pursuant to Section 6.4.3; or
- (ii) any Generator Weekly Confirmation Statement, EGAT Monthly Confirmation Statement, or Meter Reconciliation Statement or any part thereof which is determined as correct pursuant to the dispute resolution in accordance with Section 13.

The information contained in a Final Confirmation Statement shall be binding on both Parties for the purposes of this Agreement save in the following circumstances:

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- (a) for a Final Confirmation Statement referred to in Section 6.5(i):
  - (1) in the case of manifest error; or
  - (2) in the case of fraud or misrepresentation; or
  - (3) in the circumstances specified in Section 6.7; or
- (b) for a Final Confirmation Statement referred to in Sections 6.5(i) and 6.5(ii), in the event of any adjustments pursuant to Section 7.2.

## 6.6 Effects of Final Confirmation Statements

- 6.6.1 The Generator and EGAT shall use the information contained in the applicable Final Confirmation Statement to prepare the relevant Payment Invoices required by Section 7.1.
- 6.6.2 Either Party shall exclude from any Payment Invoice prepared in accordance with Section 7.1 any amount due from the other Party as represented in any item or part thereof in any Confirmation Statement or Meter Reconciliation Statement, to the extent that such item or part thereof is disputed in accordance with this Agreement.

## 6.7 Subsequent Review of Confirmation Statements, Meter Reconciliation Statements and Payment Invoices

- 6.7.1 Nothing in this Agreement shall prevent either Party from disputing the information contained in or referred to in a Confirmation Statement, a Meter Reconciliation Statement or a Payment Invoice based on any such statement at any time where in all the circumstances such Party shall have reasonable grounds to so dispute, provided that no dispute shall be raised in relation to information contained in any Confirmation Statement, Meter Reconciliation Statement or Payment Invoice after twelve (12) Full Calendar Months of receipt of such Confirmation Statement, Meter Reconciliation Statement or the first relevant Payment Invoice by the relevant Party; provided further that in the event that a series of Payment Invoices are issued in respect of an amount due to revision or updating, as applicable, no dispute shall be raised in relation to such amount contained in the relevant Payment Invoices after twelve (12) Full Calendar Months of receipt of the last Payment Invoice in such series of Payment Invoices.
- 6.7.2 In the event that notice of a dispute shall be given by a Party in respect of a Confirmation Statement, a Meter Reconciliation Statement or a Payment Invoice under Section 6.7.1 and the Parties do not resolve the dispute within fourteen (14) days after the notice thereof, either Party may initiate a dispute resolution in accordance with Section 13.1.2.
- 6.7.3 In respect of any Confirmation Statement or any Meter Reconciliation Statement which forms the basis of any Payment Invoice which has

been paid or discharged, the Party that issued such disputed Payment Invoice shall retain the disputed amount until the dispute is settled in accordance with Section 13.

**6.8 Payments pursuant to Resolution of Disputes in respect of Confirmation Statements, Meter Reconciliation Statements and Payment Invoices**

(a) Upon the resolution of any dispute arising pursuant to Sections 6.4 or 6.7, the amount determined pursuant to such resolution shall be paid to the relevant Party. Any amount due from one Party to the other Party pursuant to this Agreement that is either:

- (1) remaining unpaid after the due date for payment by reason of a dispute and which is subsequently determined or agreed to be due to the Party requesting such payment; or
- (2) paid before being disputed in accordance with Section 6.7 and which is subsequently determined or agreed to be not due to the Party having received such payment,

shall bear interest (for the period both after and before the resolution of such dispute):

- (i) in respect of any Baht amount, at the Minimum Overdraft Rate, and in respect of any US Dollar amount, at LIBOR, from and including the date when the amount in question was due or the date when the amount paid was notified as being in dispute, as the case may be, until (but excluding) the date of resolution of dispute; and
- (ii) thereafter at the Default Rate, from and including the date of resolution of dispute until (but excluding) the date of payment in full,

and be paid to the relevant Party.

Interest at the applicable rate as specified herein shall accrue on a daily basis for the actual days elapsed, on the basis of a 365-day year (in the case of any Baht amount) or a 360-day year (in the case of any US Dollar amount). Such interest shall not be compounded.

(b) Any payment made pursuant to any agreement or determination in accordance with the dispute resolution process set forth in Section 13 shall be made together with any additional amounts which may be due in excess of the disputed amount as agreed to by the Parties or determined in accordance with such dispute resolution process together with interest thereon, such interest to accrue at the same rate and in the same manner as that interest accruing in accordance with Sections 6.8(a)(i) and/or 6.8(a)(ii), as applicable.

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**6.9 Interference with Metering Equipment**

If either Party shall intentionally interfere with any Metering Equipment in a manner which gives rise to a need for a meter adjustment necessitating an additional payment or rebate to the other Party, such additional payment or such rebate, as applicable, shall be paid together with interest thereon at the Default Rate for the period for which such payment or rebate is outstanding. Such interference shall constitute a material breach of this Agreement.

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## 7. BILLING AND PAYMENT

### 7.1 Payment Invoices

7.1.1 In respect of a given month in which any amount shall be payable by EGAT to the Generator under this Agreement, the Generator shall:

- (a) on or after the earlier to occur of:
  - (i) the date on which all the relevant Generator Weekly Confirmation Statements in respect of all Non Overlapping Weeks the last date of which falls in the relevant month have been agreed by the Parties pursuant to Section 6.4.2(a); and
  - (ii) the fifteenth (15<sup>th</sup>) Business Day after the receipt of all the relevant Generator Weekly Confirmation Statements in respect of all Non Overlapping Weeks the last date of which falls in the relevant month; or
- (b) on or after the date that is either permitted in or required by Schedule 9 following the termination of this Agreement, when applicable; or
- (c) other than (a) and (b) above, on or after the date on which such amount payable by EGAT to the Generator occurs,

where applicable, prepare and issue to EGAT an invoice in respect of such amount due to the Generator from EGAT (the “**Generator Payment Invoice**”) for that month pursuant to this Agreement. Such Generator Payment Invoice shall be prepared either on the basis of the applicable Final Confirmation Statements or in accordance with Schedule 9 or the relevant provision of this Agreement, as applicable, and shall, when relevant and applicable, be prepared in accordance with Schedule 28.

7.1.2 In respect of a given month in which any amount shall be payable by the Generator to EGAT under this Agreement, EGAT shall:

- (a) on or after the earlier to occur of:
  - (i) the date on which the relevant EGAT Monthly Confirmation Statement has been agreed by the Parties pursuant to Section 6.4.2(a); and
  - (ii) the fifteenth (15<sup>th</sup>) Business Day after the receipt of the relevant EGAT Monthly Confirmation Statement; or
- (b) on or after the date that is permitted in Schedule 9 following the



termination of this Agreement, when applicable; or

- (c) other than (a) and (b) above, on or after the date on which such amount payable by the Generator to EGAT occurs,

where applicable, prepare and issue to the Generator an invoice in respect of such amount due to EGAT from the Generator (the “**EGAT Payment Invoice**”) for that month pursuant to this Agreement. Such EGAT Payment Invoice shall be prepared either on the basis of the applicable Final Confirmation Statements or in accordance with Schedule 9 or the relevant provision of this Agreement, as applicable, and shall, when relevant and applicable, be prepared in accordance with Schedule 28.

- 7.1.3 (a) Each Generator Payment Invoice pursuant to Section 7.1.1 shall specify the amount due to the Generator in respect of: (i) the relevant Monthly Energy Payment (together with the components thereof and respective Energy Components in association therewith), (ii) any liquidated damages, and (iii) other payments arising under this Agreement, in Baht and US Dollars, as specified in this Agreement.

- (b) Each EGAT Payment Invoice pursuant to Section 7.1.2 shall specify the amount due to EGAT in respect of: (i) any liquidated damages, and (ii) other payments arising under this Agreement, in Baht and US Dollars, as specified in this Agreement.

- 7.1.4 (a) Other than a Termination Payment to be made by one Party pursuant to Schedule 9 and subject to Sections 6.7 and 7.1.4(b), the undisputed amount invoiced by one Party to the other Party in respect of any month or part thereof pursuant to Sections 7.1.1 and 7.1.2, when applicable, shall be paid in full in the amounts and currencies set out in the relevant Payment Invoice within thirty (30) days following the date on which such invoice is deemed to have been delivered to and received by the Party responsible for payment of such invoice. Subject to Section 6.8, the Party disputing payment of any part of the invoiced amount may elect to withhold payment of the disputed part of the invoiced amount until such dispute has been resolved in accordance with this Agreement.

- (b) Either Party may at any time set off any and all sums due and payable by it under this Agreement against the amounts payable to it by the other Party in respect of the same period (and first applying any currency against like currency and if different currencies remain, by converting Baht amounts to US Dollars or vice versa using the Prevailing Exchange Rate) in accordance with Section 17.9. If such set off would not fully

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discharge any amount owed to the other Party, the balance of the undisputed portion of the relevant Payment Invoice shall be paid in full not later than thirty (30) days following the date on which such invoice is deemed to have been delivered to and received by the Party responsible for payment of such invoice.

- (c) If any amount invoiced by one Party to the other Party in respect of any month or part thereof (including any Unpaid EGAT FMOA or any Unpaid Generator FMOA) is not paid on the due date in full in the amounts and currencies set out in the relevant Payment Invoice by payment or setting off of such outstanding balance, then the relevant balance outstanding from time to time shall bear interest in accordance with Section 7.5.

- 7.1.5 For the avoidance of doubt, for the purposes of establishing the date of delivery and receipt under Section 7.1.4, the delivery and receipt of Payment Invoices shall be effected either by hand or by post in accordance with Section 17.3 and in no event shall such delivery and receipt be effected by facsimile. The submission of the Payment Invoice by facsimile transmission prior to the delivery and receipt of such Payment Invoice as provided above shall be deemed as pre-notification only, which shall not constitute delivery to and receipt by the other Party of such Payment Invoice and shall have no legal or contractual significance.

## 7.2 Adjustments to Payment Invoices

- 7.2.1 (a) In the event that there is a need for the adjustment in respect of the Generator Payment Invoice (either in respect of liquidated damages or otherwise) due from EGAT, either pursuant to the issuance of a Meter Reconciliation Statement in respect of Monthly Energy Payment or otherwise and subject to there being no dispute as to the amount payable pursuant thereto in accordance with Section 6, the Generator shall, within fifteen (15) Business Days after the end of the month in which such Meter Reconciliation Statement shall have been delivered or the month in which such Generator Payment Invoice shall have been issued, prepare and issue to EGAT a debit note (where payment pursuant thereto is due to the Generator) or a credit note (where payment pursuant thereto is due to EGAT) in respect of the amount due.
- (b) In the event that there is a need for the adjustment in respect of the EGAT Payment Invoice (either in respect of liquidated damages or otherwise) due from the Generator and subject to there being no dispute as to the amount payable pursuant thereto in accordance with Section 6, EGAT shall, within fifteen (15) Business Days after the end of the month in which

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such EGAT Payment Invoice shall have been issued, prepare and issue to the Generator a debit note (where payment pursuant thereto is due to EGAT) or a credit note (where payment pursuant thereto is due to the Generator) in respect of the amount due.

7.2.2 The amount shown as being due from one Party to the other Party in the debit note or the credit note referred to in Section 7.2.1(a) shall, in the case of a debit note issued by the Generator, be added to the amount of the Generator Payment Invoice issued in respect of the relevant month (adding any currency with like currency only) or, in the case of a credit note issued by the Generator, be entered as a credit and reduce the amount of the Generator Payment Invoice issued in respect of the relevant month (applying any currency against like currency only). If and to the extent that the amount of any credit accruing to EGAT hereunder cannot be fully utilized against the relevant Generator Payment Invoice, provision shall be made for the residual credit to reduce the amount of each succeeding Generator Payment Invoice until such time as the amount of the credit has been fully utilized or, if this Agreement is terminated prior to the amount of the credit being fully accounted for as aforesaid, the amount thereof remaining unaccounted for at the date of termination shall be paid by the Generator to EGAT within five (5) Business Days after written demand by EGAT therefor. If any credit accruing to EGAT at any time under this Section 7.2.2 is not fully discharged against the next succeeding Generator Payment Invoice, then the relevant balance thereof outstanding from time to time shall bear interest in accordance with Section 7.5.

7.2.3 The amount shown as being due from one Party to the other Party in the debit note or the credit note referred to in Section 7.2.1(b) shall, in the case of an debit note issued by EGAT, be added to the amount of the EGAT Payment Invoice issued in respect of the relevant month (applying any currency with like currency only) or, in the case of a credit note issued by EGAT, be entered as a credit and reduce the amount of the EGAT Payment Invoice issued in respect of the relevant month (applying any currency against like currency only). If and to the extent that the amount of any credit accruing to the Generator hereunder cannot be fully utilized against the relevant EGAT Payment Invoice, provision shall be made for the residual credit to reduce the amount of each succeeding EGAT Payment Invoice until such time as the amount of the credit has been fully utilized or, if this Agreement is terminated prior to the amount of the credit being fully accounted for as aforesaid, the amount thereof remaining unaccounted for at the date of termination shall be paid by EGAT to the Generator within five (5) Business Days after written demand by the Generator therefor. If any credit accruing to the Generator at any time under this Section 7.2.3 is not fully discharged against the next succeeding EGAT Payment Invoice, then the relevant balance thereof outstanding from time to

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time shall bear interest in accordance with Section 7.5.

### 7.3 Payment Procedure

- (a) Notwithstanding any other provisions in this Agreement to the contrary, in the event that the payment of any sum by one Party to the other Party that is specified by this Agreement to be made in US Dollars requires the Bank of Thailand's approval:
- (i) the Parties shall seek the Bank of Thailand's approval for the paying Party to pay such sum to the payee Party and the payee Party to receive such sum from the paying Party in US Dollars; and
  - (ii) in the event that the Bank of Thailand declines to grant such approval or during the period prior to the time when the Bank of Thailand grants such approval, any payment that is required by this Agreement to be made in US Dollars by the paying Party to the payee Party shall be made in Thai Baht calculated on the basis of the selling rate of the US Dollars, publicly reported by the Bank of Thailand, that would have applied if the paying Party had made its payment in US Dollars at the relevant time.
- (b) Prior to the date on which the Debt to the Lenders have been fully repaid, any amounts in Thai Baht due and payable by EGAT pursuant to this Agreement shall be paid in accordance with this Agreement to the accounts at a branch of the Krung Thai Bank Public Company Limited in Bangkok and its vicinity or at a branch of such other Thai Bank and any amounts in US Dollars due and payable by EGAT pursuant to this Agreement shall be paid in accordance with this Agreement to the accounts of a bank, whose details are provided to EGAT by the Security Agent prior to the date of the first payment by EGAT pursuant to this Agreement or to such other account as the Security Agent may otherwise specify to EGAT from time to time.
- (c) On and after the date on which the Debt to the Lenders have been fully repaid, any sums in Thai Baht payable pursuant to this Agreement shall be made by check or by wire transfer into a Thai Baht denominated bank account at a branch of the Krung Thai Bank Public Company Limited in Bangkok and its vicinity or at a branch of such other Thai Bank, in both cases as the payee Party has provided prior written notification to the paying Party. The payee Party shall notify the paying Party in writing of the details of the bank account to which sums due to the payee Party shall be credited, identifying such bank account by means of the bank name and address, the bank sort code number, the bank account number and the bank account title. Any payment in Thai Baht shall be made before 11:00 a.m. Thailand time.

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In the event that the payee Party requests that payment be made by wire transfer into a Thai Baht denominated bank account at a Thai Bank other than a branch of the Krung Thai Bank Public Company Limited in Bangkok and its vicinity, any and all additional bank charges and expenses that arise shall be borne by the payee Party.

- (d) On and after the date on which the Debt to the Lenders have been fully repaid, subject to Sections 7.3(a), any sums in US Dollars payable pursuant to this Agreement shall be made by deposit of freely transferable funds for same day settlement in the New York Clearing House Interbank Payment System by telegraphic transfer into a US Dollar denominated bank account at a branch of the Krung Thai Bank Public Company Limited in Bangkok and its vicinity or at a branch of such other Thai Bank, in both cases as notified to the paying Party by the payee Party. The payee Party shall notify the paying Party in writing of the details of the bank account to which sums due to the payee Party shall be credited, identifying such bank account by means of the bank name and address, the bank sort code number, the bank account number and the bank account title. Any payment in US Dollars shall be made before 11:00 a.m. New York City time.
- (e) Subject to Section 7.3(a):
- (i) Payment by deposit of fund transfer provided in Section 7.3(d) shall be made only on a day that is both a Business Day in Thailand and a Business Day in the country in which the US Dollar denominated bank receiving such fund transfer is located; and
- (ii) Any payment that becomes due and payable on a day that is not a Business Day in both Thailand and the country in which such US Dollar denominated bank account is located shall be paid on the next succeeding day that is a Business Day in both such countries.

Any payment that is delivered or deposited after 11:00 am on the due date shall be deemed to have been made on the next Business Day.

- (f) Any bank charges and other expenses incurred in connection with a transfer of funds provided in Section 7.3(d) imposed by the paying Party's bank shall be paid by the paying Party. For the avoidance of doubt, any charges or expenses imposed by the payee Party's bank shall be borne by the payee Party.

#### 7.4 Application of Payments

Any payments received by one Party from the other Party under this Agreement shall be applied in or towards settlement of amounts payable to the payee Party and, unless otherwise agreed to by the Parties, with the longest outstanding amount being settled first, provided that this Section 7.4 shall not

apply in respect of payment of any disputed amount where such payment shall be applied in or towards settlement of such disputed amount.

### 7.5 Interest

Subject to the provisions of Section 6.8 in respect of amounts in dispute, any amount (including any Unpaid EGAT FMOA or any Unpaid Generator FMOA) properly due from one Party to the other Party pursuant to this Agreement and remaining unpaid after the due date for payment shall bear interest (for the period both after and before the resolution of such dispute) at the applicable Default Rate from (and including) the date when the amount in question was due until (but excluding) the date of payment in full. Interest at the applicable Default Rate shall accrue on a day to day basis for the actual days elapsed, on the basis of a 365-day year (in the case of any Baht amount) or a 360-day year (in the case of any US Dollar amount), as applicable. Such interest shall not be compounded.

Any default interest accrued in respect of any Unpaid EGAT FMOA or any Unpaid Generator FMOA shall not constitute part of the Force Majeure Offset Amount.

### 7.6 Taxes

7.6.1 The Generator shall pay:

- (a) all Taxes charged or arising in the Lao PDR in connection with the execution and delivery of this Agreement;
- (b) all Taxes charged or arising both in Thailand and the Lao PDR regarding or related to the performance by the Generator of its obligations hereunder, including the construction, installation, ownership, operation and maintenance of the Generator System, the Generator Interconnection Facilities and the Common Interconnection Facilities, and in connection with the sale of generation capacity and electrical energy to EGAT (including Weekly Dispatch Shortfall Energy), the purchase of Imported Energy from EGAT, the performance of its obligations under this Agreement and in respect of any interest, damages or other amounts paid or payable to or by the Generator hereunder; and
- (c) any and all Taxes (including any withholding or like Taxes) charged or arising in Thailand and the Lao PDR in respect of or charged on account of income derived or deemed to be derived by the Generator from Thailand or any Taxes charged or arising in respect of the overall net income of the Generator.

7.6.2 EGAT shall pay:

- (a) all Taxes charged or arising in Thailand in connection with the execution and delivery of this Agreement; and
- (b) all Taxes charged or arising both in Thailand and the Lao PDR regarding or related to the performance by EGAT of its obligations hereunder, including the construction, installation, ownership, operation, maintenance and repair of the EGAT Transmission Facilities, the EGAT Interconnection Facilities and the Common Interconnection Facilities, and in connection with the purchase of electrical energy from the Generator (including Weekly Dispatch Shortfall Energy), the sale of Imported Energy to the Generator, the performance of its obligations under this Agreement and in respect of any interest, damages or other amounts paid or payable to or by EGAT hereunder; and
- (c) any and all Taxes (including any withholding or like Taxes) charged or arising in Thailand and the Lao PDR in respect of or charged on account of income derived or deemed to be derived by EGAT from the Lao PDR due to the exercise by EGAT of its step-in rights pursuant to Section 10.3, provided that the Generator shall indemnify EGAT in accordance with Section 14.1.6 against and in respect of any and all Taxes imposed in the Lao PDR if EGAT were liable to pay such Taxes due to the exercise by EGAT of its step-in rights pursuant to Section 10.3.

7.6.3 Notwithstanding any other provisions (including Sections 7.6.1 and 7.6.2) in this Agreement to the contrary, the Parties agree that in no event shall EGAT be liable to pay any business turnover tax, value-added tax and/or any other kinds of taxes of similar nature charged or arising in the Lao PDR in connection with the purchase and receipt of generating capacity and/or electrical energy in association with this Agreement. For the avoidance of doubt, such taxes shall not be taken into account or included in calculating and/or making any payment by EGAT to the Generator in respect of any and all generating capacity and/or electrical energy that EGAT purchased and received from the Generator under this Agreement, including the Energy Payment and/or, the Test Energy Payment.

#### 7.7 Currency of Payments other than Monthly Energy Payment

Unless otherwise specified, each payment in respect of costs, expenses, indemnification and Taxes shall, subject to Section 7.3(a), be made in the currency in which the same were incurred.

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## 8. TERM, PERIODS AND MILESTONE DATES

### 8.1 Term and Extension

#### 8.1.1 Term

The Term of this Agreement shall be the period that:

- (a) commences from the Execution Date; and
- (b) continues thereafter and be terminated on the Scheduled Termination Date (unless terminated earlier in accordance with the provisions of this Agreement).

#### 8.1.2 Extension of Term due to Force Majeure

- (a) In the event that one or more Generating Units are not Commissioned by the SCOD due to Force Majeure affecting either or both of the Parties,
  - (i) the Parties shall set off the EGAT FMOA Limit against the Generator FMOA Limit; and
  - (ii) the last portion of the Relevant Period 2 the duration of which is equal to the balance of such period remaining after the set off under Section 8.1.2(a)(i) above shall be defined as the “**Pre COD FMOA Clearing Period**”.

For the avoidance of doubt, the Term shall not be extended pursuant to the establishment of such Pre COD FMOA Clearing Period.

- (b) In the event that there is one or more Force Majeure affecting either or both of the Parties on or after the Commercial Operation Date:
  - (i) the Term shall be extended on a day-for-day basis for the duration of all such Force Majeure;
  - (ii) subject to Section 11.9.3 and save for the case where this Agreement is terminated prior to the Relevant FMOA Clearing Period n referred to in this Section 8.1.2(b)(ii), in respect of such cases where one or more Force Majeure affecting either or both of the Parties within the Relevant Period n (where n is any of 1, 2, 3 4 and 5), the initial portion of the immediately succeeding Relevant Period n +1 the duration of which is equal to the total duration of all such Force Majeure occurring within that Relevant Period n up to the last day thereof shall be defined as the “**Relevant FMOA Clearing**”

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**Period n**” (where n is any of 1, 2, 3, 4 and 5), provided that if a Force Majeure commences in the Relevant Period n (where n is any of 1, 2, 3, 4 and 5) and continues into the Relevant Period n +1, the duration of such Force Majeure associated with the respective Relevant Period shall be separately accounted for the purposes of the establishment of such Relevant FMOA Clearing Period n and Relevant FMOA Clearing Period n + 1, respectively; and

- (iii) subject to Section 11.9.3 and save for the case where this Agreement is terminated prior to the Relevant FMOA Clearing Period 6 referred to in this Section 8.1.2(b)(iii), in respect of such case where one or more Force Majeure affecting either or both of the Parties within the Relevant Period 6, the initial portion of the Total 29-Year Related FM Extended Period defined in Section 8.1.2(e) the duration of which is equal to the lesser of:
- (1) the total duration of all such Force Majeure occurring within the Relevant Period 6 up to (but excluding) the 29<sup>th</sup> anniversary of the Commercial Operation Date plus the duration of the Post 29-Year FM Period; and
  - (2) the duration of the Total 29-Year Related FM Extended Period;

shall be defined as the “**Relevant FMOA Clearing Period 6**”.

- (c) The sum of: (1) the duration of all Relevant FMOA Clearing Period n (where n is any of 1, 2, 3, 4 and 5) defined in Section 8.1.2(b)(ii); and (2) the total duration of all Force Majeure occurring within the Relevant Period 6 up to (but excluding) the 29<sup>th</sup> anniversary of the Commercial Operation Date shall be defined as the “**Total 29-Year Related FM Extension**”.
- (d) In the event that a Force Majeure commences in Relevant Period 6 and continues into the period thereafter, subject to Sections 11.7.5, 11.8.5 and 11.9.3 and save for the case where this Agreement is terminated prior to the Relevant FMOA Clearing Period 6 referred to in Section 8.1.2(b)(iii), the period starting from (and including) the 29<sup>th</sup> anniversary of the Commercial Operation Date until (but excluding) the date on which that Force Majeure ceases shall be defined as the “**Post 29-Year FM Period**”.

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- (e) The period after the Post 29-Year FM Period the duration of which equal to the Total 29-Year Related FM Extension shall be defined as the “**Total 29-Year Related FM Extended Period**”, provided that such Total 29-Year Related FM Extended Period shall be further extended on a day-for-day basis for the duration of any separate Force Majeure that occurs during such Total 29-Year Related FM Extended Period. Notwithstanding any other provisions in this Agreement to the contrary, the Parties expressly agree that there shall be neither payment nor clearing of FMOA in respect of such separate Force Majeure that occurs during such Total 29-Year Related FM Extended Period.
- (f) The Scheduled Termination Date shall be extended by a period the duration of which being equal to the sum of the duration of the Post 29-Year FM Period and the duration of the Total 29-Year Related FM Extended Period, as applicable.
- (g) In the event that:
- (i) the Term of this Agreement is extended in accordance with this Section 8.1.2; and
  - (ii) the term of the Concession Agreement has not been extended accordingly,

the Generator shall be obliged to cause the term of the Concession Agreement to be duly extended so that there shall be no inconsistency between the terms of the Concession Agreement and this Agreement, and the Generator shall demonstrate to EGAT’s satisfaction that the term of the Concession Agreement has been duly extended within sixty (60) days after the date on which the relevant Force Majeure occurs. A failure of the Generator to render the term of the Concession Agreement to be duly extended in accordance with this Section 8.1.2(g) would have a Material Adverse Effect upon the rights and obligations of EGAT under this Agreement and constitute a Generator Event of Default.

### 8.1.3 Extension of Term by Agreement

In addition to any extension pursuant to Sections 8.1.2, the Term may be extended upon terms and conditions mutually agreed to by the Parties.

In respect of the extension referred to in this Section 8.1.3, a Party wishing to extend the Term shall notify the other Party in writing not less than two (2) years prior to the Scheduled Termination Date. If the other Party agrees to consider the extension of the Term, the Parties

shall negotiate the terms and conditions of such extension in good faith and the Generator shall use its best effort to negotiate with the GOL in order to extend the term of the Concession Agreement, as necessary.

#### 8.1.4 Extension of the Terms of other Agreements

Where the Scheduled Termination Date is extended beyond the date immediately preceding the 29<sup>th</sup> anniversary of the Commercial Operation Date, the Parties shall use all reasonable endeavors to extend: (i) the respective term of the Project Agreements (to the extent such exist or are necessary for the performance of the Generator in accordance with this Agreement), licenses and security; and (ii) all other legal rights, authorizations and Governmental Approvals, as such are necessary to effectuate the extensions of the Term.

#### 8.1.5 Survival of Rights on Termination

All rights and obligations of each Party under this Agreement shall cease upon the Term Termination Date other than:

- (a) any rights or obligations which have accrued prior to such Term Termination Date; and
- (b) any continuing rights or continuing obligations arising under this Agreement which are expressly stated to continue after such Term Termination Date.

### 8.2 **Milestone Dates**

The respective scheduled dates for the occurrence of each of the principal activities in respect of the development and construction of all Generator Subsystems and all EGAT Subsystems (the “**Milestone Dates**”) are:

Scheduled Financial Close Date or SFCF:	the later of: (a) the date that is 6 Full Calendar Months after the Execution Date ; and (b) 1 July 2011-
Scheduled First Payment Date or SFPD:	3 Full Calendar Months after the Financial Close Date
Scheduled EGAT Interconnection Facilities Ready Date or SEIRD:	70 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Generator Interconnection Facilities Ready Date or SGIRD:	70 Full Calendar Months after the EGAT Construction Obligation Commencement Date

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## Term, Periods and Milestone Dates

## Section 8

Scheduled Common Interconnection Facilities Ready Date or SCIRD:	71 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled EGAT Connection Ready Date or SECRD:	71 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Generator Connection Ready Date or SGCRD:	71 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Connection Date or SCD:	71 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Energization Date or SED:	73 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled First Unit Commissioning Ready Date or SCRD <sub>1</sub> :	81 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Second Unit Commissioning Ready Date or SCRD <sub>2</sub> :	83 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Third Unit Commissioning Ready Date or SCRD <sub>3</sub> :	84 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Fourth Unit Commissioning Ready Date or SCRD <sub>4</sub> :	85 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Fifth Unit Commissioning Ready Date or SCRD <sub>5</sub> :	86 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Sixth Unit Commissioning Ready Date or SCRD <sub>6</sub> :	87 Full Calendar Months after the EGAT Construction Obligation Commencement Date
Scheduled Seventh Unit Commissioning Ready Date or SCRD <sub>7</sub> :	88 Full Calendar Months after the EGAT Construction Obligation Commencement Date

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Scheduled Commercial Operation Date or SCOD:	The later of: (a) 90 Full Calendar Months after the EGAT Construction Obligation Commencement Date; and (b) 1 January 2019
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### 8.3 Permitted Extensions of Milestone Dates

#### 8.3.1 (a) Permitted extensions of Milestone Dates

In respect of the extension of any Milestone Date pursuant to this Section 8.3, all extensions after the first extension of such Milestone Date shall be extended from the date of the immediately preceding extended Milestone Date, provided always that any overlapping duration of two or more extensions shall be extended only once.

#### (b) In respect of determination related to Event of Default

Subject to the maximum aggregate extensions permitted for the SFCD as provided in Section 8.3.2(a), in respect of determining the delay in achieving a specified obligation by the specified Milestone Date for the purpose of Sections 10.1 and 10.2:

- (i) Any such specified Milestone Date shall be extended day-for-day for the duration of such delay solely as a result of Force Majeure in accordance with Sections 11.5.1(a) and 11.5.2(b) and any other specified Milestone Dates the achievement of which is dependent upon the achievement of the first-mentioned specified Milestone Date which is delayed solely as a result of Force Majeure shall also be extended day-for-day in accordance with Section 11.5.2(b).
- (ii) Any such specified Milestone Date shall be extended day-for-day for the duration of such delay solely due to the act or omission of the other Party.
- (iii) The extension of any Milestone Date pursuant to Section 8.3 shall neither prejudice either Party's right to terminate this Agreement in accordance with Section 11.11 nor affect the determination of the duration of the effect of the relevant Force Majeure for the purpose of Section 11.11.

#### 8.3.2 Extension of SFCD for the Purpose of Section 10.2.1(e)

- (a) The SFCD shall from time to time be extended in the following circumstances:

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- (i) on a day-for-day basis for each day of the duration of any delay in achieving the Financial Close Date by the Scheduled Financial Close Date caused solely by any Generator Force Majeure or Lao Political Force Majeure; and
- (ii) on a day-for-day basis for each day of the duration of any delay in achieving the Financial Close Date by the Scheduled Financial Close Date caused solely by any Thai Political Force Majeure;

provided that the aggregate of all extensions to the SFCD pursuant to this Section 8.3.2(a) shall not exceed three hundred and sixty-five (365) days.

- (b) For the purpose of determining Generator's liability to pay liquidated damages under Section 9.5.1, the SFCD as extended in accordance with Section 8.3.2(a)(ii) hereof shall be referred to as the "ESFCD".

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## 9. SECURITIES AND LIQUIDATED DAMAGES

### 9.1 Development Security

- (a) Subject to the replenishment of the Development Security in accordance with the requirements of Section 9.1(e)(III), the Generator shall provide to EGAT and, until such time as each of the relevant Securities comprised in the Development Security is either drawn down and retained by EGAT, returned to the Generator or is converted to and constitutes the respective Security comprised in the Performance Security, as the case may be, in accordance with Section 9.1(e), maintain (subject to drawn down by EGAT) in full force and effect the Development Security in accordance with the requirements set forth herein (including Section 9.3) in the applicable requisite amount specified in Section 9.1(b)(III) to secure, in whole or in part, Generator's payment of: (i) compensation due to termination of this Agreement for failure of the Generator to satisfy the Conditions Precedent for which it is responsible pursuant to Section 1.5.4; (ii) liquidated damages pursuant to Section 9.5; (iii) Force Majeure Offset Amounts; and (iv) any compensation owed to EGAT by the Generator due to the termination of this Agreement prior to the Commercial Operation Date pursuant to Sections 10.2.3 or 11.8.5.
- (b) The Generator shall provide the Development Security to EGAT in installments as follows:
- (i) on the Execution Date, financial security in an amount equal to nineteen million US Dollars (USD 19,000,000) (the "**First Security**"); and
  - (ii) no later than the Financial Close Date, three financial securities detailed as follows:
    - (1) a financial security in an amount equal to fifteen million US Dollars (USD 15,000,000) (the "**Second Security**");
    - (2) a financial security in an amount equal to nine million US Dollars (USD 9,000,000) (the "**Third Security**");
    - (3) a financial security in an amount equal to six million US Dollars (USD 6,000,000) (the "**Fourth Security**").

For purposes of this Agreement:

- (I) the Development Security One shall comprise the First Security;
- (II) the Development Security Two shall comprise the First Security, the Second Security, the Third Security and the Fourth Security; and

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Securities and Liquidated DamagesSection 9

- (III) the requisite amounts of the Development Security One and the Development Security Two shall be equal to nineteen million US Dollars (USD 19,000,000) and forty-nine million US Dollars (USD 49,000,000), respectively.

The Development Security One and the Development Security Two shall be required to satisfy all of the requirements applicable to the Development Security set forth in this Section 9.

- (c) (i) Subject to Sections 9.1(e) and 9.2(d), as applicable, the Generator shall maintain each and all of the First Security, the Second Security, the Third Security and the Fourth Security, as applicable, in full force and effect until the Expiry Date specified in the respective Security.
- (ii) If any of the First Security, the Second Security, the Third Security and the Fourth Security comprised in the Development Security One or the Development Security Two, as applicable, is in the form of a bank guarantee,
- (1) notwithstanding any other provisions in this Agreement to the contrary, EGAT shall, subject to Section 9.1(c)(ii)(2)(aa), have the right to draw down the full amount of any of the First Security, the Second Security, the Third Security and the Fourth Security comprised in the Development Security One or the Development Security Two, as applicable, or any portion thereof in accordance with the terms specified in each such Security; and
- (2) such bank guarantee shall expressly provide to EGAT the right to draw down the full amount or any portion thereof of any of the First Security, the Second Security, the Third Security and the Fourth Security comprised in the Development Security One or the Development Security Two, as applicable, for which EGAT shall be entitled to retain any such drawn amount; provided that:
- (aa) with respect to any such drawn amount that is not due and owing to EGAT, EGAT shall retain such amount to be dealt with in the same manner had it been held as security in the form of a bank guarantee;
- (bb) with respect to any such drawn amount that is disputed by the Generator as being due and owing to EGAT, EGAT shall retain such amount as security pending dispute resolution.

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- (d) The Generator hereby acknowledges that EGAT has entered into this Agreement in reliance on and in consideration of the undertaking of the Generator that the Generator System will be in operation by the Scheduled Commercial Operation Date in accordance with the terms and conditions of this Agreement. The Generator further acknowledges that EGAT must have adequate assurances as to the timely and successful completion of the Generator System in order to engage in system planning and to justify dedicating financial resources to the construction of the EGAT Transmission Facilities. Based on the foregoing, the Generator agrees that EGAT shall have the right in each instance to draw against the Development Security in accordance with the following procedure:
- (i) In the event that: (i) the Generator incurs liability for liquidated damages pursuant to Section 9.5; or (ii) the Generator incurs liability for Force Majeure Offset Amounts; or (iii) EGAT is otherwise entitled to compensation for which the Development Security has secured payment pursuant to Section 9.7(a), EGAT may claim such liquidated damages or Force Majeure Offset Amounts or compensation by issuing an EGAT Payment Invoice to the Generator, requiring the Generator to make direct payments of such amounts to EGAT within thirty (30) days after receipt of such EGAT Payment Invoice. The Generator shall be entitled to dispute all or any part of such liquidated damages or such Force Majeure Offset Amounts or such compensation claimed by EGAT in accordance with Sections 6 and 7, provided that EGAT is notified in writing of such dispute within thirty (30) days after receipt of such EGAT Payment Invoice.
- (ii) In the event that the Generator fails to dispute and fails to make payments of any such written claim for liquidated damages or Force Majeure Offset Amounts or compensation within thirty (30) days after its receipt of the relevant EGAT Payment Invoice, or the Generator fails to pay any amount previously disputed by either Party in accordance with this Agreement within five (5) Business Days after such dispute having been resolved pursuant to Section 13 in favor of EGAT, EGAT shall be entitled to draw down from the Development Security an amount equal to the foregoing amount owed to EGAT and retain such funds drawn down from the Development Security to satisfy such amount, in whole or in part, as are due and owing to EGAT. In instances when either:
- (1) the undisputed amount of any liabilities due and owing to EGAT by the Generator, as invoiced by EGAT in accordance with Section 9.1(d)(i); or
- (2) any disputed amounts that are resolved in favor of EGAT pursuant to Section 13,

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exceeds the then undrawn amount of the Development Security, the Generator shall make direct payments to EGAT of such excess in an amount equal to such excess within thirty (30) days after receipt of such EGAT Payment Invoice or, as the case may be, five (5) Business Days after resolution of such disputed amounts in favor of EGAT.

- (iii) Any payment failure of an undisputed amount shall constitute a Generator Event of Default pursuant to Section 10.2.1(a) to the extent that: (1) there remain amounts due and owing to EGAT; and (2) the failure of the Generator to make direct payments in satisfaction thereof continues unremedied beyond thirty (30) days after the date on which EGAT has given the Generator a written notice of such payment failure, provided that, any failure to make direct payment of undisputed amount shall not constitute a Generator Event of Default pursuant to Section 10.2.1(a) to the extent that the remaining portion of the Development Security then in effect exceeds the total amount claimed to be due and owing to EGAT and EGAT is able to satisfy such claimed amount by drawing down from the Development Security in accordance with this Section 9.1.
- (e) (I) Other than as provided in Section 1.5.4, in the event that this Agreement is terminated before the Financial Close Date pursuant to Sections 10.1.2, 10.2.2 or 11.11, the Development Security One shall either be drawn down and retained by EGAT or be returned to the Generator as follows:
- (i) upon termination of this Agreement before the Financial Close Date due to the occurrence of an EGAT Event of Default or any Force Majeure other than a Lao Political Force Majeure pursuant to Sections 10.1.2 or 11.11, as applicable, EGAT shall return the full amount of the Development Security One then in effect to the Generator within thirty (30) days after the Term Termination Date; or
- (ii) upon termination of this Agreement before the Financial Close Date due to the occurrence of a Generator Event of Default or a Lao Political Force Majeure pursuant to Sections 10.2.2 or 11.11, as applicable, EGAT shall draw down and retain the full amount of the Development Security One then in effect together with all interest accrued thereon, if any, as compensation of such termination and no portion of such Development Security One then in effect shall be returned to the Generator.
- (II) In the event that this Agreement is terminated on or after the Financial Close Date but before the Commercial Operation

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Date, EGAT shall, following the payment or deduction from the Development Security Two of any and all amounts due and owing to EGAT that are not disputed by the Generator and such further amounts as are asserted by EGAT to be due to EGAT (regardless of whether or not disputed by the Generator), as specified in or otherwise permitted by Section 9.7(a), return the Development Security Two then in effect to the Generator within one hundred and eighty (180) days after the occurrence of the termination of this Agreement; provided, however, that all amounts deducted from the Development Security Two hereunder that are asserted by EGAT to be due and owing to EGAT but that are disputed by the Generator shall be retained by EGAT as security pending dispute resolution.

- (III) In the event that this Agreement is not terminated prior to the Commercial Operation Date and the Generator intends to provide the Performance Security One to EGAT by converting the Development Security into the Performance Security One, then on the date on which the Generator achieves the Commercial Operation Date,
- (i) each of the First Security, the Second Security and the Third Security comprised in the Development Security shall, following the replenishment of each of such Securities to one hundred per cent (100%) of the respective amounts specified for such Securities in Sections 9.1(b)(i) or 9.1(b)(ii), as the case may be, in the event that any of such Securities has been drawn down by EGAT, be converted to and constitute the respective Security comprised in the Performance Security One; and
  - (ii) EGAT shall, following the payment or deduction from the Fourth Security comprised in the Development Security of any and all amounts due and owing to EGAT that are not disputed by the Generator and such further amounts as are asserted by EGAT to be due to EGAT (regardless of whether or not disputed by the Generator), as specified in or otherwise permitted by Section 9.7(a), return the Fourth Security then in effect to the Generator; provided, however, that all amounts deducted from the Fourth Security hereunder that are asserted by EGAT to be due and owing to EGAT but that are disputed by the Generator shall be retained by EGAT as security pending dispute resolution.

In the event that the Generator does not intend to provide the Performance Security One to EGAT by converting the Development Security into the Performance Security One, EGAT shall return the First Security, the Second Security and

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the Third Security comprised in the Development Security then in effect to the Generator in the same manner as in the case for the Fourth Security as provided in Section 9.1(e)(III)(ii) above

## 9.2 Performance Security

- (a) Subject to the replenishment of the Performance Security in accordance with the requirements of this Section 9.2, the Generator shall provide to EGAT the Performance Security on or before the Commercial Operation Date which shall become effective and fully in force on the Commercial Operation Date and the Generator shall, until such time as the relevant Security comprised in the Performance Security is returned to the Generator in accordance with Section 9.2(e), maintain in full force and effect the Performance Security in accordance with the requirements set forth herein (including Section 9.3) to secure, in whole or in part, Generator's payment of: (i) liquidated damages pursuant to Section 9.5; (ii) Force Majeure Offset Amounts; and (iii) all other compensation otherwise owed by the Generator to EGAT for which EGAT is entitled pursuant to Section 9.6(b) to draw down funds secured by the Performance Security.

For purposes of this Agreement:

- (i) the Performance Security One shall comprise the First Security, the Second Security and the Third Security;
- (ii) the Performance Security Two shall comprise the Second Security; and
- (iii) the requisite amounts of the Performance Security One and the Performance Security Two shall be equal to forty-three million US Dollars (USD 43,000,000) and fifteen million US Dollars (USD 15,000,000), respectively.

The Performance Security One and the Performance Security Two shall be required to satisfy all of the requirements applicable to the Performance Security set forth in this Section 9.

- (b) (i) Subject to Section 9.2(e), the Generator shall maintain each and all of the First Security, the Second Security and the Third Security comprised in the Performance Security One or the Performance Security Two, as applicable, in full force and effect, including replenishing the Performance Security in accordance with the requirements of Section 9.2, until the expiry date specified in the respective Security.
- (ii) If any of the First Security, the Second Security and the Third Security comprised in the Performance Security One or the Performance Security Two, as applicable, is in the form of a bank guarantee,

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- (1) notwithstanding any other provisions in this Agreement to the contrary, EGAT shall, subject to Section 9.2(b)(ii)(2)(aa), have the right to draw down the full amount of any of the First Security, the Second Security, and the Third Security comprised in the Performance Security One or the Performance Security Two, as applicable, or any portion thereof in accordance with the terms specified in each such Security; and
- (2) such bank guarantee shall expressly provide to EGAT the right to draw down the full amount or any portion thereof of any of the First Security, the Second Security, and the Third Security comprised in the Performance Security One or the Performance Security Two, as applicable, for which EGAT shall be entitled to retain any such drawn amount; provided that:
- (aa) with respect to any such drawn amount that is not due and owing to EGAT, EGAT shall retain such amount to be dealt with in the same manner had it been held as security in the form of a bank guarantee;
- (bb) with respect to any such drawn amount that is disputed by the Generator as being due and owing to EGAT, EGAT shall retain such amount as security pending dispute resolution; and
- (cc) in the event that EGAT exercises its right pursuant to Section 9.2(b) to draw down the full amount or any part thereof of the Performance Security prior to expiration of the relevant Security comprised therein, then the Generator shall immediately replenish the Performance Security to the full amount as are asserted by EGAT to be due to EGAT (regardless of whether or not disputed by the Generator).
- (c) (i) In the event that: (i) the Generator incurs liability for liquidated damages pursuant to Section 9.6; or (ii) the Generator incurs liability for Force Majeure Offset Amounts; or (iii) EGAT is entitled pursuant to Section 9.7(b) to draw down funds secured by the Performance Security, EGAT may claim such liquidated damages or such Force Majeure Offset Amounts or such compensation by issuing an EGAT Payment Invoice to the Generator, such EGAT Payment Invoice shall either: (1) notify the Generator that such amounts as are owed to EGAT shall be set off in accordance with Section 17.9 against the Monthly Energy Payment and any sums due and payable by EGAT to

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the Generator for the forthcoming month, provided that for the period during which Debt has not be fully repaid to the Lenders EGAT shall not set off more than twenty per cent (20%) of the Monthly Energy Payment payable in such month; or (2) require the Generator to make direct payments of such amounts to EGAT within thirty (30) days after receipt of such EGAT Payment Invoice. The Generator shall be entitled to dispute all or any part of such liquidated damages or such Force Majeure Offset Amounts or such compensation claimed by EGAT in accordance with Sections 6 and 7.

- (ii) In the event that EGAT notifies the Generator that EGAT shall set off such amounts as are owed to EGAT in accordance with Section 17.9 but the amounts as are owed to EGAT is greater than the amount that EGAT is entitled to set off against all or part of the Monthly Energy Payment and any sums due and payable in the relevant month in accordance with such Section 17.9, the Generator shall make direct payment to EGAT of such excess within thirty (30) days after receipt of such EGAT Payment Invoice. Without prejudice to or limiting Section 9.1(c)(ii), in the event that the Generator fails to make payments of such excess within thirty (30) days after its receipt of the relevant EGAT Payment Invoice, EGAT shall be entitled to draw down from the Performance Security an amount equal to such excess.

In the event that EGAT requires the Generator to make direct payments to EGAT, and the Generator fails to dispute and fails to make payments of any such written claim for liquidated damages or Force Majeure Offset Amounts or compensation within thirty (30) days after its receipt of the relevant EGAT Payment Invoice, or the Generator fails to pay any amount previously disputed by either Party in accordance with this Agreement within five (5) Business Days after such dispute having been resolved pursuant to Section 13 in favor of EGAT, EGAT shall be entitled to draw down from the Performance Security an amount equal to the foregoing amount owed to EGAT and retain such funds drawn down from the Performance Security to satisfy such amount, in whole or in part, as are due and owing to EGAT. In instances when either:

- (1) the undisputed amount of any liabilities due and owing to EGAT by the Generator, as invoiced by EGAT in accordance with Section 9.2(b)(i); or
- (2) any disputed amounts that are resolved in favor of EGAT pursuant to Section 13,

exceeds the then undrawn amount of the Performance Security, the Generator shall either make direct payments to EGAT of

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such excess or replenish the Performance Security in an amount equal to such excess within thirty (30) days after receipt of such EGAT Payment Invoice or, as the case may be, five (5) Business Days after resolution of such disputed amounts in favor of EGAT. Upon receiving such replenished Performance Security, EGAT may obtain satisfaction of such excess by drawing down against the replenished Performance Security. The Generator shall replenish the Performance Security in accordance with Section 9.2(c) after having compensated EGAT of such excess.

- (iii) Any payment failure of an undisputed amount shall constitute a Generator Event of Default pursuant to Section 10.2.1(a) to the extent that: (1) there remain amounts due and owing to EGAT after EGAT has exercised its right to set off referred to in Section 9.2(b) and drawn down the whole of the then undrawn amount of the Performance Security (as having been replenished); and (2) the failure of the Generator to make direct payments in satisfaction thereof continues unremedied beyond thirty (30) days after the date on which EGAT has given the Generator a written notice of such payment failure.
- (d) If at any time during the period on and after the Commercial Operation Date the then undrawn amount of the Performance Security One or the Performance Security Two falls below fifty per cent (50)% of the respective requisite amount specified in Section 9.2(a)(III), the Generator shall replenish the Performance Security One or the Performance Security Two, as the case may be, within thirty (30) days after the date when the undrawn amount of such Performance Security One or such Performance Security Two falls below fifty per cent (50%) of the respective requisite amount specified in Section 9.2(a)(III), so as to replenish the Performance Security One or the Performance Security Two, as the case may be, to one hundred per cent (100%) of the respective requisite amount specified in Section 9.2(a)(III).

Failure on the part of the Generator to replenish the Performance Security within the respective time period specified in Section 9 shall be deemed and construed as the Generator having failed to make payment owing to EGAT for purposes of application of Section 10.2.1(a).

- (e) (I) In the event that this Agreement is terminated on or after the Commercial Operation Date but prior to the fifteenth (15<sup>th</sup>) anniversary of the Commercial Operation Date, EGAT shall, following either: (1) the satisfaction in full by the Generator of its obligations to pay: (i) compensation owed to EGAT as a result of such termination (if any) pursuant to Sections 10.2.3 or 11.8.5, as the case may be; and (ii) such other compensation as otherwise due and owing to EGAT by the Generator pursuant to Sections 9.2(c) and 9.6(b); or (2) the deduction from the First

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Security, the Second Security and the Third Security of the amounts as are asserted by EGAT to be due to EGAT (regardless of whether or not disputed by the Generator), return the remaining portion of the First Security, the Second Security and the Third Security then in effect to the Generator within one hundred and eighty (180) days following the termination of this Agreement; provided that all amounts so deducted from the remaining portion of the First Security, the Second Security and the Third Security that are asserted by EGAT to be due and owing to EGAT but that are disputed by the Generator shall be retained by EGAT as security pending dispute resolution.

- (II) In the event that this Agreement is not terminated prior to the fifteenth (15<sup>th</sup>) anniversary of the Commercial Operation Date, EGAT shall, following the fifteenth (15<sup>th</sup>) anniversary of the Commercial Operation Date, return the First Security and the Third Security to the Generator following the payment or deduction from such First Security and Third Security of any and all undisputed amounts due and owing to EGAT, and deduction of such further amounts as are asserted by EGAT to be due to EGAT (regardless of whether or not disputed by the Generator); provided that all amounts so deducted from such First Security and Third Security that are asserted by EGAT to be due and owing to EGAT but that are disputed by the Generator shall be retained by EGAT as security pending dispute resolution.
- (III) In the event that this Agreement is terminated on or after the fifteenth (15<sup>th</sup>) anniversary of the Commercial Operation Date, EGAT shall, following either: (1) the satisfaction in full by the Generator of its obligations to pay: (i) compensation owed to EGAT as a result of such termination (if any) pursuant to Sections 10.2.3 or 11.8.5, as the case may be; and (ii) such other compensation as otherwise due and owing to EGAT by the Generator pursuant to Sections 9.2(c) and 9.6(b); or (2) the deduction from the Second Security of the amounts as are asserted by EGAT to be due to EGAT (regardless of whether or not disputed by the Generator), return the remaining portion of the Second Security then in effect to the Generator within one hundred and eighty (180) days following the termination of this Agreement; provided that all amounts so deducted from the remaining portion of the Second Security that are asserted by EGAT to be due and owing to EGAT but that are disputed by the Generator shall be retained by EGAT as security pending dispute resolution.

### 9.3 Acceptable Sources for and Requirements Applicable to Securities

- (a) Each one of the Securities shall, at Generator's option, be in the form

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of either cash or an irrevocable bank guarantee in the name and for the benefit of EGAT issued by one or more Thai Banks the credit rating of each of which is not worse than two grades below the sovereign credit rating for foreign currency debt obligations of Thailand; provided that in the event that the Generator notifies EGAT that the Generator intends to provide a Security in the form of an irrevocable bank guarantee but such Security cannot be issued by one or more Thai Banks the credit rating of each of which satisfies the above requirement, EGAT may, at EGAT's sole discretion and without prejudice to or limiting Section 9.3(c), accept a Security issued by one or more Thai Banks that is or are acceptable to EGAT.

- (b) If the Generator provides a Security in the form of an irrevocable bank guarantee issued by one or more Thai Banks, the bank guarantee shall be substantially in the form set forth in Schedule 27 for the relevant Security.
- (c) In the event that any Security has been issued by one or more Thai Banks and at any time thereafter the credit rating of any of such Thai Banks is worse than two grades below the sovereign credit rating for foreign currency debt obligations of Thailand, then EGAT may require by written instruction delivered to the Generator that such Thai Bank be replaced as the source of such Security by either another Thai Bank with a credit rating not worse than two grades below the sovereign credit rating for foreign currency debt obligations of Thailand or, at EGAT's sole discretion and without prejudice to or limiting this Section 9.3(c), another Thai Bank acceptable to EGAT. With respect to such Security, the Generator shall comply with the written notification of EGAT to post such substitute or replacement security within thirty (30) days after receipt of such written instruction. For purposes of application of this Section 9.3, the credit rating of each Thai Bank shall be measured by the rating assigned to its long term senior and unsecured debt or such other rating in respect of such Thai Bank reported by Standard and Poor's Rating Services or Moody's Investor Services Inc., as the case may be, which is considered appropriate by EGAT at its sole discretion.
- (d) In the event that a Security is in a form of an irrevocable bank guarantee that has been issued by more than one Thai Banks:
- (i) EGAT shall draw down any amount from that bank guarantee by issuing a Demand Notice (as such term is defined in the bank guarantee) to the Commercial Securities Facility Agent;
  - (ii) to the extent that EGAT has not received the full amount demanded by EGAT after having issued a Demand Notice to the Commercial Securities Facility Agent as referred to in Section 9.3(d)(i) above, EGAT shall claim directly against the Thai Banks issuing the relevant bank guarantee;

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- (iii) the Generator agrees that all costs and expenses incurred by the Commercial Securities Facility Agent in performing its role as the Commercial Securities Facility Agent shall be for the sole expense of the Generator; and
- (iv) to the extent that the Commercial Securities Facility Agent or, as the case may be, one or more of the Thai Banks issuing the relevant bank guarantees to EGAT:
  - (i) invoices or invoice costs or levy charges against EGAT; and/or
  - (ii) pays or pay to EGAT an amount less than the amount demanded by EGAT,

the Generator shall immediately upon notification by EGAT indemnify EGAT and hold EGAT harmless for any such costs or charges or pay to EGAT the difference between the amount that EGAT actually received and the full amount demanded by EGAT under the relevant bank guarantee together with the interest, if any, in respect of such costs or charges or such differential amount at the Default Rate in accordance with this Agreement.

#### 9.4 Additional Security

9.4.1 No later than the Financial Close Date, the Generator shall execute a second ranking mortgage in favor of EGAT over the Generator System (including the Facility, buildings, equipment, machinery, real property assets and all improvements to the Site) in all respects in accordance with the Law of the Lao PDR and the requirements of this Agreement applicable thereto (hereinafter, the “**Additional Security**”) which shall:

- (a) be substantially in the form set out in Part I of Schedule 25; and
- (b) secure Generator’s performance of its obligations to EGAT under this Agreement up to an amount equal to fourteen thousand and five hundred million (14,500,000,000) Baht,

provided that the Generator shall deliver the executed first ranking mortgage that the Generator provides to, and in favor of, the Lenders to EGAT no later than fifteen (15) days prior to the execution of the second ranking mortgage.

Upon confirming that it has been provided the Additional Security so executed by the Generator and receiving of such executed first ranking mortgage in accordance with this Section 9.4.1, EGAT shall itself execute the Additional Security as required for such Additional Security to become fully effective and fully in force pursuant to the

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- 9.4.2 The Additional Security shall be subordinated at all times to the Debt.
- 9.4.3 With respect to all financing and refinancing of all amounts of debt that are in addition to those that constitute Debt secured under the mortgages and security interests, such additional debt other than Debt shall be subordinated at all times to the Additional Security.
- 9.4.4 No later than the Financial Close Date the Generator shall deliver to EGAT a subordination agreement duly executed by the Lenders or the Security Agent and the Generator regarding the Additional Security and the Insurance Assignment in the form and substance set forth in Part III of Schedule 25 or as is otherwise mutually acceptable to the parties thereto (hereinafter, the “**Subordination Agreement**”), together with:
- (a) all other documents that are required to be executed and delivered pursuant to the Additional Security and the Subordination Agreement under the Law of the Lao PDR and any other applicable Law for the enforceability thereof, duly executed by all of the parties thereto; and
  - (b) evidence in the form of the legal opinion referred to in Section 1.5.1(g) that the Additional Security and the Subordination Agreement have each been, to the extent required by the Law of the Lao PDR, duly registered with the State Assets Management Department of the Ministry of Finance of the Lao PDR and that the Generator has taken or satisfied such other acts and requirements as are required by the Law of the Lao PDR to ensure that the Additional Security and the Subordination Agreement are enforceable against the Generator and the other parties thereto.

Upon confirming that it has been provided the Subordination Agreement so executed by the other parties thereto, EGAT shall itself execute and deliver to the Generator the Subordination Agreement as soon as reasonably practicable.

- 9.4.5 The Generator shall bear its own costs and all reasonable costs incurred by EGAT in connection with: (i) the negotiation and execution of the Additional Security granted to EGAT and the Subordination Agreement; (ii) when such is requested by the Generator, the consents, releases and related documents required by any Lenders from time to time; and (iii) all other documents related thereto. The Generator shall also pay the mortgage registration fees from time to time to register the Additional Security, the Subordination Agreement and subsequent re-registrations under applicable Law required in connection with refinancing or additional financing.

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- 9.4.6 Subject to the limitations set forth in Sections 9.4.2 and 9.4.3 and the Subordination Agreement, EGAT acknowledges and agrees that the Generator may refinance and obtain additional financing in connection with the Generator System from time to time.

EGAT further agrees to execute any consents reasonably requested by the Lenders for subsequent refinancing or financing (or, if necessary, a release of the Additional Security) from time to time in order to comply with the terms of the Subordination Agreement, and the Generator agrees to re-register the Additional Security granted to EGAT, if applicable and bear all reasonable expenses incurred in relation thereto by EGAT.

- 9.4.7 The Generator shall have the right at any time to provide one or more bank guarantees, each of which being issued by one or more of the Thai Banks each of which satisfies the credit criteria set forth in Section 9.3(c), in lieu of all or a portion of the Additional Security provided in accordance with Section 9.4.1. All costs associated with such substitution of the Additional Security shall be borne by the Generator.
- 9.4.7 EGAT shall at the request of the Generator subordinate the Additional Security to additional amounts of financing in excess of the then outstanding Debt amount; provided, and to the extent, that the Generator provides to EGAT one or more bank guarantees, each of which being issued by one or more of the Thai Banks and satisfying the credit criteria set forth in Section 9.3(c), in an amount equal to the principal amount of the financing in excess of the then outstanding Debt amount. All costs associated with EGAT executing a new subordination agreement to subordinate the Additional Security to such additional or excess amount of debt referred to herein shall be borne by the Generator.

## 9.5 Liquidated Damages and Force Majeure Offset Amounts in respect of Project Development

### 9.5.1 Liquidated Damages payable by the Generator due to Delay in achieving the Financial Close Date by the later of SFCD and ESFCD

In the event that the Generator fails to achieve the Financial Close Date by the later of the SFCD and the ESFCD, the Generator shall pay to EGAT as liquidated damages the amount of four thousand US Dollars (USD 4,000) per day for each day of the period commencing from (and including) the later of the SFCD and the ESFCD up to (but excluding) the earlier of the Financial Close Date and the date of termination of this Agreement, such payment to be made on a monthly basis.

The liquidated damages falling due under this Section 9.5.1 shall be

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payable by the Generator in accordance with Sections 9.1(d)(i) and 7.1 in US Dollars.

**9.5.2 Accounting of Delay between ECOCD and COD**

- (a) From the ECOCD up to the Seven Units Operation Ready Date, each Party shall maintain the following records in respect of any delay in fulfilling the relevant obligation by the applicable Milestone Date:
- (i) the duration of such delay accounted on a day-for-day basis; and
  - (ii) the cause of such delay, whether Force Majeure or the act or omission of either Party and, in the event of a Force Majeure, the efforts of the Affected Party to mitigate such Force Majeure.

Such records may include the record of the scheduling and performance of Commissioning Testing activities pursuant to Section 2.10.3.

- (b) From the ECOCD up to the later of ED and CRD<sub>1</sub>, the following shall be determined:
- (i) first, each Party's responsibility for any delay in achieving CIRD by SCIRD in accordance with Paragraph 2 of Schedule 8;
  - (ii) second, each Party's responsibility for any delay in achieving CD by SCD in accordance with Paragraph 3 of Schedule 8;
  - (iii) third, each Party's responsibility for any delay in achieving ED by SED in accordance with Paragraph 4 of Schedule 8; and
  - (iv) fourth, each Party's responsibility for any delay in commencing the Post-Energization Commissioning of the First Generating Unit in accordance with Paragraph 5(A) of Schedule 8.
- (c) As at the later of ED and CRD<sub>1</sub>, the following shall be determined in accordance with Paragraph 5(A)(b) of Schedule 8:
- (i) EGAT Relative Delay in Commencing PostECP<sub>1</sub>;
  - (ii) GSCOD;

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- (iii) ESCOD;
  - (iv) EGAT FMOA Limit; and
  - (v) Generator FMOA Limit.
- (d) Upon the occurrence of the later of ED and  $CRD_N$ , where N is 2, 3, 4, 5, 6 or 7, the EGAT Relative Delay in Commencing  $PostECP_N$  in respect of such Generating Unit shall be determined in accordance with Paragraph 5(B) of Schedule 8.
- (e) Any Change of Grid Code occurring prior to the Commercial Operation Date which requires any modification to the Generator System (including any of the Contracted Operating Characteristics or the Design Limits) shall be considered as a Thai Political Force Majeure affecting the Generator.
- (f) All references to the application of GSCOD and ESCOD in this Section 9.5 and Schedule 8 shall be construed as follows:
- (i) where there is extension for such GSCOD or ESCOD, such GSCOD or ESCOD shall be as extended pursuant to Section 9.5.4, as applicable; and
  - (ii) where there is no Generator Absolute Delay in Commencing  $PostECP_1$  or there is no EGAT Absolute Delay in Commencing  $PostECP_1$ , such GSCOD or ESCOD shall be the same date as SCOD, as applicable.
- (g) In the event that the Generator agrees with the GOL, pursuant to the Concession Agreement or otherwise, that the GOL undertakes, on the Generator's behalf, to construct, install and/or Commission, either wholly or partially, certain Generator Subsystems that the Generator is obliged to construct, install and/or Commission under this Agreement, and the achievement of the Commercial Operation Date is delayed beyond the Scheduled Commercial Operation Date due to the delay in completing such Generator Subsystems undertaken by the GOL, such event, condition and circumstance shall not constitute a Lao Political Force Majeure affecting the Generator or EGAT under this Agreement, regardless of whether or not such event, condition and circumstance constitutes a Lao Political Force Majeure under the Concession Agreement or any other agreement.

### 9.5.3 Liability for Delay Amounts

- (a) EGAT's liability for delay in commencing Post-Energization Commissioning

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In the event that GSCOD occurs prior to ESCOD and the Acceptance Date of the Certificate of Readiness for Operation in respect of a given N<sup>th</sup> Generating Unit (where N is 1, 2, 3, 4, 5, 6 or 7) does not occur by the GSCOD, subject to Section 9.5.4, EGAT shall be liable to pay Delay Amounts on a monthly basis for each day comprised in the period starting from (and including) the GSCOD and continuing until (but excluding) the earlier to occur of:

- (i) ESCOD;
  - (ii) the Acceptance Date of the Certificate of Readiness for Operation in respect of such N<sup>th</sup> Generating Unit; and
  - (iii) the expiry of the period after GSCOD the duration of which is equal to the respective EGAT Relative Delay in Commencing PostECP<sub>N</sub>.
- (b) The Generator's liability for delay in commencing Post-Energization Commissioning

In the event that the Acceptance Date of the Certificate of Readiness for Operation in respect of a given N<sup>th</sup> Generating Unit (where N is 1, 2, 3, 4, 5, 6 or 7) does not occur by the ESCOD, subject to Section 9.5.4, the Generator shall be liable to pay Delay Amounts on a monthly basis for each day comprised in the period starting from (and including) the ESCOD and continuing until (but excluding) the Acceptance Date of the Certificate of Readiness for Operation in respect of such N<sup>th</sup> Generating Unit.

(c) Qualification of Delay Amounts

- (i) The Delay Amounts payable by EGAT in each month in respect of any N<sup>th</sup> Generating Unit (where N is 1, 2, 3, 4, 5, 6 or 7) shall first be qualified as Force Majeure Offset Amounts for the number of days up to an amount equal to:
  - (1) in respect of the first month, the EGAT FMOA Limit; or
  - (2) in respect of each month thereafter, the EGAT FMOA Limit less the aggregate number of days in previous months for which Delay Amounts payable by EGAT have been qualified as FMOA.

Any balance number of days in each such month for which Delay Amount is payable by EGAT shall then be qualified as liquidated damages.

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The aggregate number of days for which Delay Amounts payable by EGAT in respect of the N<sup>th</sup> Generating Unit are qualified as FMOA shall be defined as the “N<sup>th</sup> Unit EGAT FM Period”, and the aggregate number of days for which Delay Amounts payable by EGAT in respect of the N<sup>th</sup> Generating Unit are qualified as liquidated damages shall be defined as the “N<sup>th</sup> Unit EGAT LD Period”.

- (ii) The Delay Amounts payable by the Generator in each month in respect of any N<sup>th</sup> Generating Unit (where N is 1, 2, 3, 4, 5, 6 or 7) shall first be qualified as Force Majeure Offset Amounts for the number of days up to an amount equal to:
- (1) in respect of the first month, the Generator FMOA Limit; or
  - (2) in respect of each month thereafter, the Generator FMOA Limit less the aggregate number of days in previous months for which Delay Amounts payable by the Generator have been qualified as FMOA.

Any balance number of days in each such month for which Delay Amount is payable by the Generator shall then be qualified as liquidated damages.

The aggregate number of days for which Delay Amounts payable by the Generator in respect of the N<sup>th</sup> Generating Unit are qualified as FMOA shall be defined as the “N<sup>th</sup> Unit Generator FM Period”, and the aggregate number of days for which Delay Amounts payable by the Generator in respect of the N<sup>th</sup> Generating Unit are qualified as liquidated damages shall be defined as the “N<sup>th</sup> Unit Generator LD Period”.

#### 9.5.4 Occurrence of particular Events during the Post-Energization Commissioning

##### (a) EGAT Force Majeure or Thai Political Force Majeure

- (i) Where any EGAT Force Majeure or Thai Political Force Majeure occurs during the Post-Energization Commissioning Phase before ESCOD that delays the achievement of the COD by the ESCOD, for the duration of such event (in days):

- (1) ESCOD shall be extended;

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- (2) the EGAT FMOA Limit shall be increased; and
- (3) subject to the condition that CRD<sub>N</sub> has occurred (other than the case when such failure to occur is due to a Thai Political Force Majeure), the EGAT Relative Delay in Commencing PostECP<sub>N</sub> shall be increased,

each such extension or increase being on a day-for-day basis.

- (ii) Where any EGAT Force Majeure or Thai Political Force Majeure occurs during the Post-Energization Commissioning Phase after the ESCOD, for the duration of such event (in days):
  - (1) the Generator shall not be liable to pay Delay Amounts; and
  - (2) subject to the condition that CRD<sub>N</sub> has occurred (other than the case when such failure to occur is due to a Thai Political Force Majeure), EGAT shall be liable to pay Force Majeure Offset Amounts for each day for which each Generating Unit is not Commissioned.

(b) Generator Force Majeure or Lao Political Force Majeure

- (i) Where any Generator Force Majeure or Lao Political Force Majeure occurs during the Post-Energization Commissioning Phase before GSCOD, for the duration of such event (in days):
  - (1) GSCOD shall be extended; and
  - (2) the Generator FMOA Limit shall be increased;

each such extension or increase being on a day-for-day basis.
- (ii) Where any Generator Force Majeure or Lao Political Force Majeure occurs during the Post-Energization Commissioning Phase after GSCOD, for the duration of such event (in days):
  - (1) in case such event occurs prior to ESCOD, EGAT shall not be liable to pay Delay Amounts; and
  - (2) the Generator FMOA Limit shall be increased on a day-for-day basis.

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9.5.5 Payment of Force Majeure Offset Amounts and/or Liquidated Damages

- (a) The Force Majeure Offset Amounts and/or liquidated damages payable by each Party shall be on a per Generating Unit and per day basis.
- (b) In respect of each portion of the N<sup>th</sup> Unit Generator FM Period or the N<sup>th</sup> Unit Generator LD Period, the applicable rates of Force Majeure Offset Amounts and/or liquidated damages payable by the Generator under Sections 9.5.3 and 9.5.4 are set out, in US Dollars on a per Generating Unit and per day basis for the applicable duration of the respective portion, as follows:

<b>Portions of N<sup>th</sup> Unit Generator FM Period or Portions of N<sup>th</sup> Unit Generator LD Period</b>	<b>Generator Delay Rate (US Dollar)</b>
From the 1 <sup>st</sup> day to the 60 <sup>th</sup> day	30,000
From the 61 <sup>st</sup> day to the 120 <sup>th</sup> day	35,000
From the 121 <sup>st</sup> day to the 180 <sup>th</sup> day	40,000
Beyond the 180 <sup>th</sup> day	45,000

- (c) In respect of each portion of the N<sup>th</sup> Unit EGAT FM Period or the N<sup>th</sup> Unit EGAT LD Period, the applicable rates of Force Majeure Offset Amounts and/or liquidated damages payable by EGAT under Sections 9.5.3 and 9.5.4 are set out, in US Dollar on a per Generating Unit and per day basis for the applicable duration of the respective portion, as follows:

<b>Portions of N<sup>th</sup> Unit EGAT FM Period or Portions of N<sup>th</sup> Unit EGAT LD Period</b>	<b>EGAT Delay Rate (US Dollar)</b>
From the 1 <sup>st</sup> day to the 60 <sup>th</sup> day	30,000
From the 61 <sup>st</sup> day to the 120 <sup>th</sup> day	35,000
From the 121 <sup>st</sup> day to the 180 <sup>th</sup> day	40,000
Beyond the 180 <sup>th</sup> day	45,000

- (d) The progressive rate applicable to various portions of the total Force Majeure Offset Amounts or the total liquidated damages payable by a Party under Sections 9.5.3 and 9.5.4 as set out in Sections 9.5.5(b) and 9.5.5(c) above shall apply independently and separately: (i) for each Generating Unit; and (ii) for FMOA

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and liquidated damages.

- (e) The amount of Force Majeure Offset Amounts and liquidated damages due from the Generator or EGAT under Sections 9.5.3 and 9.5.4 shall be calculated in US Dollars in accordance with the applicable rates set out in Sections 9.5.5(b) and 9.5.5(c), respectively.
- (f) Subject to Section 7.3(a), the currency of payment of the Force Majeure Offset Amounts and/or liquidated damages calculated as due from EGAT or the Generator under Section 9.5.5 shall be, as to the first fifty percent (50%) of such amount, in US Dollars; and as to the remaining fifty percent (50%) of such amount, in Thai Baht, being calculated by applying the Reference Exchange Rate to the remaining half.

The Generator or EGAT, as applicable, shall issue Confirmation Statements and Payment Invoices of such Force Majeure Offset Amounts and liquidated damage in accordance with Sections 6 and 7.

- (g) In the event that any portion of Force Majeure Offset Amounts and/or liquidated damages due from the Generator are payable in Thai Baht and EGAT is entitled and has elected to obtain payment thereof by drawing on the Development Security in accordance with Section 9.1, respectively, the amount to be drawn in US Dollar under the Development Security to pay such portion of Force Majeure Offset Amounts and/or liquidated damages shall be determined by applying the Prevailing Exchange Rate to such Thai Baht amount.

#### 9.5.6 Delay due to EGAT Access Rights

Without prejudice to either Party's liability under Sections 9.5.3 and 9.5.4, in the event that there is any delay in achieving the ECRD and/or the EIRD by the SCD solely attributable to an EGAT Force Majeure associated with the EGAT Access Rights in accordance with Section 2.1.7 and the COD is not achieved by the SCOD (as such date may have been extended pursuant to any Generator Force Majeure or Lao Political Force Majeure) then, in respect of the period commencing from (and including) the SCOD (as such date may have been extended pursuant to any Generator Force Majeure or Lao Political Force Majeure) until (but excluding) the earlier to occur of: (1) the Seven Units Operation Ready Date; and (2) the Term Termination Date, EGAT shall pay Force Majeure Offset Amounts to the Generator on a monthly basis equal to the lesser of: (aa) the actual amount of debt service accruing to the Lenders during such relevant month comprised in the period defined herein; and (bb) the amount calculated based on the EGAT Delay Rate provided in the table of Section 9.5.5(c) for such

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relevant month; provided that the total duration for which EGAT shall be liable to pay such Force Majeure Offset Amounts shall not exceed the duration which is the lesser of: (I) the duration of such EGAT Force Majeure referred to in Section 2.1.7; and (II) EGAT's delay in achieving the CD.

**9.5.7 Liquidated Damages in respect of Deficiency of Initial Registered Capacity from the Contracted Capacity**

- (a) In the event that pursuant to any Commissioning Testing performed in accordance with Section 2.10.4(g) and Part IV of Schedule 17 the Registered Capacity when seven (7) Generating Units are in operation (the “**Initial Registered Capacity**”), being referred to the Operating Water Head at 29.5 m, is established to be less than ninety five percent (95%) of the Contracted Capacity provided in Table 1.1.1 of Part III of Schedule 1 for such Operating Water Head, the Generator shall be liable, subject to Section 9.9, to pay liquidated damages to EGAT equal to the amount of one hundred and sixty US Dollars (USD160) per kW multiplied by the shortfall (measured in kW) of such Initial Registered Capacity from ninety five percent (95%) of such Contracted Capacity.
- (b) Without prejudice to Generator's liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(i), payment of the aggregate sum of liquidated damages falling due under this Section 9.5.7 shall be made in US Dollars in one (1) single installment as follows:
- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), on the date defined in this Section 9.5.7(b); or
  - (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section 9.9(c)(iii).

The date for the purpose of this Section 9.5.7(b)(1) shall be the later of: (i) the Commercial Operation Date; and (ii) the date of the Registered Capacity Test associated with such Commissioning Testing.

EGAT shall issue Confirmation Statements and Payment Invoices in respect of such liquidated damages in accordance with Sections 6 and 7.

- (c) Notwithstanding any new values for Registered Capacity resulting from subsequent Annual Testing and Additional

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Testing in accordance with Section 2.11, in no event shall EGAT be required to refund any liquidated damages previously paid by the Generator to EGAT pursuant to this Section 9.5.7.

**9.5.8 Liquidated Damages in respect of Deficiencies of Registered Operating Characteristics from the Contracted Operating Characteristics**

In the event that pursuant to any Commissioning Testing performed in accordance with Sections 2.10.4(f) and 2.10.4(g) and Part IV of Schedule 17 it is established that any Generating Unit fails to achieve the corresponding Contracted Operating Characteristics, the Generator shall be liable, subject to Section 9.9, to pay liquidated damages to EGAT in accordance with Sections 9.5.8(a), 9.5.8(b), 9.5.8(c), 9.5.8(d) and 9.5.8(e). EGAT shall for each such case issue Confirmation Statements and Payment Invoices in respect of such liquidated damages in accordance with Sections 6 and 7.

**(a) Failure to achieve the Contracted XYB Unit Minimum Capacity**

In the event that the value of the Registered XYB Unit Minimum Capacity for one (1) Generating Unit and/or two (2) Generating Units in operation is established at the Operating Water Head prevailing at the time of the test to be greater than the corresponding Contracted XYB Unit Minimum Capacity specified in the Table 1.2.3 of Part III of Schedule 1, the amount of liquidated damages shall be determined as follows:

Let: RegXYBMinCap<sub>1</sub> be the Registered XYB Unit Minimum Capacity for one (1) Generating Unit in operation at the Operating Water Head prevailing at the time of the test;

RegXYBMinCap<sub>2</sub> be the Registered XYB Unit Minimum Capacity for two (2) Generating Units in operation at the Operating Water Head prevailing at the time of the test;

ConXYBMinCap be the Contracted XYB Unit Minimum Capacity for one (1) Generating Unit or two (2) Generating Units in operation at the Operating Water Head prevailing at the time of the test; and

XYBFacMinCapExc be the “XYB Facility Minimum Capacity Excess”;

Then: XYBFacMinCapExc  
= Max [(RegXYBMinCap<sub>1</sub> - ConXYBMinCap),  
2 x (RegXYBMinCap<sub>2</sub> - ConXYBMinCap)]

Without prejudice to Generator’s liability to pay liquidated

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damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(ii), payment of liquidated damages in respect of such amount of failure to achieve the Contracted XYB Unit Minimum Capacity shall commence as follows:

- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), on the start date defined in this Section 9.5.8(a); or
- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section 9.9(c)(iii),

in either case such payment being made until the end date.

For the purpose of this Section 9.5.8(a):

- (i) the start date referred to in Section 9.5.8(a)(1) shall be (and including) the later of: (I) the date of the establishment of such Registered XYB Unit Minimum Capacity; and (II) the Commercial Operation Date; and
- (ii) the end date shall be (but excluding) the earlier to occur of: (I) the day that such deficiency is remedied; and (II) the date that is three (3) years after the start date defined above.

The daily amount of liquidated damages shall be equal to the XYB Facility Minimum Capacity Excess determined in this Section 9.5.8(a) multiplied by eight (8) hours and the SE Based LD Rate.

Payments of liquidated damages falling due under this Section 9.5.8(a) shall be made monthly in Thai Baht.

(b) Failure to achieve the Contracted Unit Reactive Power

In the event that the value of the Registered Unit Reactive Power for any Generating Unit is established to be less than the Contracted Unit Reactive Power as specified in Table 1.5 of Schedule 1, the amount of liquidated damages shall be determined on a Unit by Unit basis as follows:

- (I) fifteen (15) US Dollar/kVAR for each lagging kVAR that the Registered Unit Reactive Power falls short of the corresponding Contracted Unit Reactive Power; or
- (II) ten (10) US Dollar/kVAR for each leading kVAR that

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the Registered Unit Reactive Power falls short of the corresponding Contracted Unit Reactive Power.

Without prejudice to Generator's liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(i), payment of the aggregate sum of liquidated damages falling due under this Section 9.5.8(b) shall be made in US Dollars in one (1) single installment as follows:

- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), on the date defined in this Section 9.5.8(b); or
- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section 9.9(c)(iii).

The date referred to in Section 9.5.8(b)(1) shall be the later of: (i) the Commercial Operation Date; and (ii) the date on which such Registered Unit Reactive Power is established.

(c) Failure to achieve ninety percent of the Contracted Unit Loading Rate

In the event that the value of the Registered Unit Loading Rate for any Generating Unit is established to be less than ninety percent (90%) of the Contracted Unit Loading Rate, the amount of liquidated damages shall be determined on both a Unit by Unit and a daily basis as follows:

Let: UniLoadLD be the liquidated damages resulting from the failure to achieve the Contracted Unit Loading Rate;

RegUniLoad be the Registered Unit Loading Rate;

ConUniLoad be the Contracted Unit Loading Rate;

DaiPUPESupTar be the Daily Per Unit PE Supply Target defined in Paragraph 1(a) of Schedule 10; and

PETar be the effective tariff for Primary Energy for the relevant month;

Then: (I) If:  $0.6 < (\text{RegUniLoad} / 0.9 \times \text{ConUniLoad}) < 1$

Then:

$\text{UniLoadLD} = 0.002 \times \text{DaiPUPESupTar} \times \text{PETar}$

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(II) If:  $0.2 < (\text{RegUniLoad} / 0.9 \times \text{ConUniLoad}) \leq 0.6$

Then:

$$\text{UniLoadLD} = 0.01 \times \text{DaiPUPESupTar} \times \text{PETar}$$

(III) If:  $0 < (\text{RegUniLoad} / 0.9 \times \text{ConUniLoad}) \leq 0.2$

Then:

$$\text{UniLoadLD} = 0.02 \times \text{DaiPUPESupTar} \times \text{PETar}$$

Notwithstanding the above statements, the liquidated damages payable under any of paragraphs (I), (II) and (III) above shall be paid on an exclusive basis.

Without prejudice to Generator's liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(ii), payment of liquidated damages in respect of such amount of failure to achieve the Contracted Unit Loading Rate shall commence as follows:

- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), on the start date defined in this Section 9.5.8(c); or
- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section 9.9(c)(iii);

in either case such payment being made until the end date.

For the purpose of this Section 9.5.8(c):

- (i) the start date referred to in Section 9.5.8(c)(1) shall be (and including) the later of: (I) the date of the establishment of such Registered Unit Loading Rate; and (II) the Commercial Operation Date; and
- (ii) the end date shall be (but excluding) the earlier to occur of: (I) the day that such deficiency is remedied; and (II) the date that is three (3) years after the start date defined above.

Subject to Section 7.3(a), payments of liquidated damages falling due under this Section 9.5.8(c) shall, for such portion of liquidated damages denominated in US Dollars or Thai Baht, be made monthly in the respective currency.

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(d) Failure to achieve ninety percent of the Contracted Unit Deloading Rate

In the event that the value of the Registered Unit Deloading Rate for any Generating Unit is established to be less than ninety percent (90%) of the Contracted Unit Deloading Rate, the amount of liquidated damages shall be determined on both a Unit by Unit and a daily basis as follows:

Let: UniDeloadLD be the liquidated damages resulting from the failure to achieve the Contracted Unit Deloading Rate;

RegUniDeload be the Registered Unit Deloading Rate;

ConUniDeload be the Contracted Unit Deloading Rate;

DaiPUSESUPTar be the Daily Per Unit SE Supply Target defined in Paragraph 1(a) of Schedule 10; and

SETar be the effective tariff for Secondary Energy for the relevant month;

Then: (I) If:  $0.6 < (\text{RegUniDeload} / 0.9 \times \text{ConUniDeload}) < 1$

Then:

$$\text{UniDeloadLD} = 0.002 \times \text{DaiPUSESUPTar} \times \text{SETar}$$

(II) If:  $0.2 < (\text{RegUniDeload} / 0.9 \times \text{ConUniDeload}) \leq 0.6$

Then:

$$\text{UniDeloadLD} = 0.01 \times \text{DaiPUSESUPTar} \times \text{SETar}$$

(III) If:  $0 < (\text{RegUniDeload} / 0.9 \times \text{ConUniDeload}) \leq 0.2$

Then:

$$\text{UniDeloadLD} = 0.02 \times \text{DaiPUSESUPTar} \times \text{SETar}$$

Notwithstanding the above statements, the liquidated damages payable under any of paragraphs (I), (II) and (III) above shall be paid on an exclusive basis.

Without prejudice to Generator's liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(ii), payment of liquidated damages in respect of such amount of failure to achieve the Contracted Unit Deloading Rate shall commence as follows:

(1) in the event that the Generator elects not to cure the

deficiency in accordance with Section 9.9(a)(ii), on the start date defined in this Section 9.5.8(d); or

- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section 9.9(c)(iii);

in either case such payment being made until the end date.

For the purpose of this Section 9.5.8(d):

- (i) the start date referred to in Section 9.5.8(d)(1) shall be (and including) the later of: (I) the date of the establishment of such Registered Unit Deloading Rate; and (II) the Commercial Operation Date; and
- (ii) the end date shall be (but excluding) the earlier to occur of: (I) the day that such deficiency is remedied; and (II) the date that is three (3) years after the start date defined above.

Payments of liquidated damages falling due under this Section 9.5.8(d) shall be made monthly in Thai Baht.

(e) Failure to achieve the Contracted Unit Primary Response

In the event that the value of the Registered Unit Primary Response for any Generating Unit is established to be less than the Contracted Unit Primary Response specified in Schedule 1, the amount of liquidated damages shall be determined on a Unit by Unit basis as follows:

Let: UniPrResLD be the liquidated damages resulting from the failure to achieve the relevant Contracted Unit Primary Response;

RegUniPrRes be the Registered Unit Primary Response (in kW);

ConUniPrRes be the Contracted Unit Primary Response (in kW); and

PRShort be the shortfall of the Registered Unit Primary Response from the Contracted Unit Primary Response (in kW);

Then:  $PRShort = \text{Max} [(ConUniPrRes - RegUniPrRes), 0]$

(I) If:  $(RegUniPrRes / ConUniPrRes) < 0.3$

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Then:

$$\text{UniPrResLD} = \text{PRShort} \times 320 \text{ US Dollar}$$

(II) If:  $0.3 \leq (\text{RegUniPrRes} / \text{ConUniPrRes}) < 1$

Then:

$$\text{UniPrResLD} = \text{PRShort} \times 160 \text{ US Dollar}$$

Without prejudice to Generator's liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(i), payment of the aggregate sum of liquidated damages falling due under this Section 9.5.8(e) shall be made in US Dollars in four (4) equal installments as follows:

- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), the first installment shall be made at the end of the month in which the later of: (i) the Commercial Operation Date; and (ii) the date on which such Registered Unit Primary Response is established, falls; or
- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), the first installment shall be made at the end of the month in which the expiry of the Cure Period falls, as provided in accordance with Section 9.9(c)(iii).

The remaining three (3) installments shall be made at the end of the month associated with the anniversary of the date on which the first installment is made.

## 9.6 Liquidated Damages in respect of Operation

In respect of any liquidated damages due from the Generator under this Section 9.6, EGAT shall for each such case issue Confirmation Statements and Payment Invoices in accordance with Sections 6 and 7.

In the event that any payment of liquidated damages due from the Generator is payable in Thai Baht and EGAT is entitled and has elected to obtain such payment thereof by drawing on the Performance Security in accordance with Section 9.2, the amount to be drawn in US Dollars under the Performance Security to pay such portion of liquidated damages shall be determined by applying the Prevailing Exchange Rate to such Thai Baht amount.

### 9.6.1 Liquidated Damages in respect of Deficiencies of Registered Capacity from the Threshold Registered Capacity

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- (a) At any time from (but excluding) the later of: (i) the Commercial Operation Date; and (ii) the date of the Registered Capacity Test associated with Commissioning Testing, in the event that pursuant to any Additional Testing or Annual Testing performed in accordance with Section 2.11 and Schedule 17 the Registered Capacity when seven (7) Generating Units are in operation, being referred to the Operating Water Head at 29.5 m, is established to be less than the then applicable threshold value for the Registered Capacity (the “**Threshold Registered Capacity**”), being the lesser of:
- (aa) ninety five percent (95%) of the Initial Registered Capacity; and
- (bb) any Registered Capacity established pursuant to all previous Post COD Testing,

both values being referred to such Operating Water Head, the Generator shall be liable, subject to Section 9.9, to pay liquidated damages to EGAT equal to the amount of one hundred and sixty US Dollars (USD160) per kW multiplied by: (1) the difference (measured in kW) between such Registered Capacity and the then applicable Threshold Registered Capacity; and (2) the Term End Factor defined as follows:

- (1) if the period from the date on which liquidated damages under this Section 9.6.1 shall accrue until the Scheduled Termination Date is equal to or greater than five (5) years, then the Term End Factor = 1; and
- (2) if the period from the date on which liquidated damages under this Section 9.6.1 shall accrue until the Scheduled Termination Date is less than five (5) years, then:

the Term End Factor =  $\text{TermEndDur} / 1826$

Where TermEndDur = the number of days between the date on which liquidated damages under this Section 9.6.1 shall accrue and the Scheduled Termination Date.

- (b) Without prejudice to Generator’s liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(i), payment of the aggregate sum of liquidated damages falling due under this Section 9.6.1 shall be made in US Dollars in one (1) single installment as follows:
- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), on the date defined in this Section 9.6.1(b); or

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- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section 9.9(c)(iii).

The date referred to in Section 9.6.1(b)(1) shall be the date of establishment of the Registered Capacity.

- (c) Notwithstanding any new values for Registered Capacity resulting from subsequent Annual Testing and Additional Testing, in no event shall EGAT be required to refund any liquidated damages previously paid by the Generator to EGAT pursuant to this Section 9.6.1.

#### 9.6.2 Liquidated Damages in respect of Generator Forced Outage

- (a) The Generator shall pay to EGAT liquidated damages for all Forced Outage PE Unavailability (as hereinafter defined) arising at any time from (and including) the Commercial Operation Date in respect of the Commissioned Units at the PE Based LD Rate.

Subject to Section 7.3(a), payments of liquidated damages falling due under this Section 9.6.2(a) shall, for such portion of liquidated damages denominated in US Dollars or Thai Baht, be made monthly in the respective currency.

- (b) The Generator shall pay to EGAT liquidated damages for all Forced Outage SE Unavailability (as hereinafter defined) arising at any time from (and including) the Commercial Operation Date at the SE Based LD Rate.

Payments of liquidated damages falling due under this Section 9.6.2(b) shall be made monthly in Thai Baht.

- (c) For the purposes of this Section 9.6.2,
- (i) the “**Forced Outage PE Unavailability**” shall be:
- (1) for a Machine Outage, the sum of all such respective portions of the relevant Settlement Period Generation Shortfall that are associated with any Generator Forced Outage occurring during the PE Period;
- (2) for a Water Supply Outage, the amount of Daily Water Supply Unavailability Limited Primary Energy determined in accordance with Paragraph 2.2.3 of Part II of Schedule 3 that is classified as a Generator Forced Outage on the

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- basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Water Supply Limitation; and
- (3) for a Tailwater Level Outage, the amount of Daily Tailwater Level Unavailability Limited Primary Energy determined in accordance with Paragraph 2.2.4 of Part II of Schedule 3 that is classified as a Generator Forced Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Tailwater Level Limitation; and
- (ii) the “**Forced Outage SE Unavailability**” shall be:
- (1) for a Machine Outage, the sum of all such respective portions of the relevant Settlement Period Generation Shortfall that are associated with any Generator Forced Outage occurring during the SE Period; and
- (2) for a Water Supply Outage, the amount of Daily Water Supply Unavailability Limited Secondary Energy determined in accordance with Paragraph 2.2.3 of Part II of Schedule 3 that is classified as a Generator Forced Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Water Supply Limitation; and
- (3) for a Tailwater Level Outage, the amount of Daily Tailwater Level Unavailability Limited Secondary Energy determined in accordance with Paragraph 2.2.4 of Part II of Schedule 3 that is classified as a Generator Forced Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Tailwater Level Limitation.

### 9.6.3 Liquidated Damages in respect of Generator Short Notice Outage

- (a) The Generator shall pay to EGAT liquidated damages for all Short Notice Outage PE Unavailability (as hereinafter defined) arising at any time from and including the Commercial Operation Date in respect of the Commissioned Units at the PE Based LD Rate.

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Subject to Section 7.3(a), payments of liquidated damages falling due under this Section 9.6.3(a) shall, for such portion of liquidated damages denominated in US Dollars or Thai Baht, be made monthly in the respective currency.

- (b) The Generator shall pay to EGAT liquidated damages for all Short Notice Outage SE Unavailability (as hereinafter defined) arising at any time from and including the Commercial Operation Date at the SE Based LD Rate.

Payments of liquidated damages falling due under this Section 9.6.3(b) shall be made monthly in Thai Baht.

- (c) For the purposes of this Section 9.6.3,
- (i) the “**Short Notice Outage PE Unavailability**” shall be:

(1) for a Machine Outage, the sum of all such respective portions of the relevant Settlement Period Generation Shortfall that are associated with any Generator Short Notice Outage occurring during the PE Period;

(2) for a Water Supply Outage, the amount of Daily Water Supply Unavailability Limited Primary Energy determined in accordance with Paragraph 2.2.3 of Part II of Schedule 3 that is classified as a Generator Short Notice Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Water Supply Limitation; and

(3) for a Tailwater Level Outage, the amount of Daily Tailwater Level Unavailability Limited Primary Energy determined in accordance with Paragraph 2.2.4 of Part II of Schedule 3 that is classified as a Generator Short Notice Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Tailwater Level Limitation,

multiplied by the Notification Time Factor (as hereinafter defined); and

- (ii) the “**Short Notice Outage SE Unavailability**” shall be:

(1) for a Machine Outage, the sum of all such

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respective portions of the relevant Settlement Period Generation Shortfall that are associated with any Generator Short Notice Outage occurring during the SE Period; and

- (2) for a Water Supply Outage, the amount of Daily Water Supply Unavailability Limited Secondary Energy determined in accordance with Paragraph 2.2.3 of Part II of Schedule 3 that is classified as a Generator Short Notice Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Water Supply Limitation; and
- (3) for a Tailwater Level Outage, the amount of Daily Tailwater Level Unavailability Limited Secondary Energy determined in accordance with Paragraph 2.2.4 of Part II of Schedule 3 that is classified as a Generator Short Notice Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Tailwater Level Limitation,

multiplied by the Notification Time Factor (as hereinafter defined); and

- (iii) the “**Notification Time Factor**” shall be the weighting factor that reflects the promptness and timing that the Generator notifies such Generator Short Notice Outage to EGAT. The determination of Notification Time Factor shall be as follows:

Effect of timing

Let: TimFac be the factor that reflects the effect of timing that such prior notification is provided by the Generator to EGAT;

Then: TimFac = 0, if such notification is given at any time prior to 12:00 a.m. of the day immediately preceding the day during which such Generator Short Notice Outage occurs;

TimFac = 1, if such notification is given at any time during the period from (and including) 12:00 a.m. until (but excluding) 4:00 p.m. of the



day immediately preceding the day during which such Generator Short Notice Outage occurs;

TimFac = 2, if such notification is given at any time during the period from (and including) 4:00 p.m. of the day immediately preceding the day during which such Generator Short Notice Outage occurs until (but excluding) thirty (30) minutes prior to the time that such Generator Short Notice Outage occurs;

#### Effect of promptness

Let: NotDur be the actual duration (in hours) that such prior notification is provided by the Generator to EGAT; and

ProFac be the factor that reflects the promptness of notification;

Then: If  $0.5 \leq \text{NotDur} < 6$

Then:  $\text{ProFac} = [5 - (\text{NotDur} / 3)]$

If  $6 \leq \text{NotDur} < 22$

Then:  $\text{ProFac} = [3 - (\text{NotDur} - 6) \times 3 / 16]$

#### Determination of Notification Time Factor

Let: NotTimFac be the Notification Time Factor;

Then:  $\text{NotTimFac} = (\text{TimFac} + \text{ProFac}) / 7$

#### 9.6.4 Liquidated Damages in respect of Generator Maintenance Outage

- (a) In respect of the Initial First Period, the Initial Second Period, as applicable, and each subsequent Contract Year, respectively, in the event that:
- (i) any Generator Maintenance Outages occurs at any time during such respective period; and
  - (ii) the aggregate amount of the Maintenance Outage PE Unavailability and Maintenance Outage SE Unavailability resulting from all Generator Maintenance Outages that have occurred during each such period

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exceeds the respective Maintenance Outage Allowance for such period,

the Generator shall pay to EGAT liquidated damages for all Maintenance Outage PE Unavailability and Maintenance Outage SE Unavailability which exceeds the respective Maintenance Outage Allowance for such period.

- (b) The Maintenance Outage PE Unavailability shall be paid at the PE Based LD Rate.

Subject to Section 7.3(a), payments of liquidated damages falling due under this Section 9.6.4(b) shall, for such portion of liquidated damages denominated in US Dollars or Thai Baht, be made monthly in the respective currency.

- (c) The Maintenance Outage SE Unavailability shall be paid at the SE Based LD Rate.

Payments of liquidated damages falling due under this Section 9.6.4(c) shall be made monthly in Thai Baht.

- (d) For the purposes of this Section 9.6.4,

- (i) the “**Maintenance Outage PE Unavailability**” shall be:

(1) for a Machine Outage, the sum of all such respective portions of the relevant Settlement Period Generation Shortfall that are associated with any Generator Maintenance Outage occurring during the PE Period;

(2) for a Water Supply Outage, the amount of Daily Water Supply Unavailability Limited Primary Energy determined in accordance with Paragraph 2.2.3 of Part II of Schedule 3 that is classified as a Generator Maintenance Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Water Supply Limitation; and

(3) for a Tailwater Level Outage, the amount of Daily Tailwater Level Unavailability Limited Primary Energy determined in accordance with Paragraph 2.2.4 of Part II of Schedule 3 that is classified as a Generator Maintenance Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Tailwater Level

Limitation; and

- (ii) the “**Maintenance Outage SE Unavailability**” shall be:
- (1) for a Machine Outage, the sum of all such respective portions of the relevant Settlement Period Generation Shortfall that are associated with any Generator Maintenance Outage occurring during the SE Period;
  - (2) for a Water Supply Outage, the amount of Daily Water Supply Unavailability Limited Secondary Energy determined in accordance with Paragraph 2.2.3 of Part II of Schedule 3 that is classified as any Generator Maintenance Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Water Supply Limitation; and
  - (3) for a Tailwater Level Outage, the amount of Daily Tailwater Level Unavailability Limited Secondary Energy determined in accordance with Paragraph 2.2.4 of Part II of Schedule 3 that is classified as a Generator Maintenance Outage on the basis of the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Tailwater Level Limitation; and
- (iii) the Initial First Period Maintenance Outage Allowance, the Initial Second Period Maintenance Outage Allowance, as applicable, and the Annual Maintenance Outage Allowance shall be as defined in Paragraph 5.2.2 of Part I of Schedule 1.

**9.6.5 Liquidated Damages in respect of Failure to Maintain the Annual Minimum PE Guarantee**

At the end of each Contract Year, the Generator shall pay to EGAT liquidated damages for each kWh of the difference between the Annual PE Supply for the relevant Contract Year and the corresponding Annual Minimum PE Guarantee defined in Paragraph 5.1.1(ii) of Part I of Schedule 1 (such amount of liquidated damages being an “**Annual LD**”) at the average of the PE Based LD Rates for all months comprised in the relevant Contract Year, provided that:

- (a) such Annual LD shall be reduced by an amount equal to the sum of all liquidated damages payable for failure to maintain the Monthly Minimum PE Guarantee during any or all of the

months in the corresponding Contract Year arising under Section 9.6.6. For the avoidance of doubt, if the sum of such liquidated damages so arising under Section 9.6.6 is greater than the Annual LD, the Generator shall not be liable to pay to EGAT any liquidated damages under this Section 9.6.5; and

- (b) the Generator shall not be liable to pay to EGAT any liquidated damages under this Section 9.6.5 if either:
- (i) the relevant Contract Year is declared by the Generator to be a drought year in accordance with Paragraph 5.1.2 of Part I of Schedule 1; or
  - (ii) the Generator's failure to Declare and provide PE Availability equal to or greater than the relevant Annual Minimum PE Guarantee is caused by the lack of Declarable Water that is solely attributable to the volume of the Dispatch Shortfall Water stored in the reservoir in accordance with Paragraph 5.1.3 of Part I of Schedule 1; or
  - (iii) the duration of the relevant Contract Year is less than twelve (12) Full Calendar Months in accordance with Paragraph 5.1.4 of Part I of Schedule 1.

Subject to Section 7.3(a), payments of liquidated damages falling due under this Section 9.6.5 shall, for such portion of liquidated damages denominated in US Dollars or Thai Baht, be made in the respective currency.

9.6.6 Liquidated Damages in respect of Failure to Maintain the Monthly Minimum PE Guarantee

Subject to Section 3.8.2(c), the Generator shall pay to EGAT liquidated damages for each kWh of the difference between the total amount of Monthly Supply in respect of Primary Energy for the relevant month determined in accordance with Paragraph 1 of Schedule 4 and the corresponding Monthly Minimum PE Guarantee defined in Paragraph 5.1.1(i) of Part I of Schedule 1 at the PE Based LD Rate, provided that the Generator shall not be liable to pay to EGAT any liquidated damages under this Section 9.6.6 if either:

- (i) the relevant month falls within the Contract Year that is the drought year declared by the Generator in accordance with Paragraph 5.1.2 of Part I of Schedule 1; or
- (ii) the Generator's failure to Declare and provide PE Availability equal to or greater than the relevant Monthly Minimum PE Guarantee is caused by the lack of Declarable Water that is solely attributable to the volume of the Dispatch Shortfall Water

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stored in the reservoir in accordance with Paragraph 5.1.3 of Part I of Schedule 1.

Subject to Section 7.3(a), payments of liquidated damages falling due under this Section 9.6.6 shall, for such portion of liquidated damages denominated in US Dollars or Thai Baht, be made monthly in the respective currency.

9.6.7 Liquidated Damages in respect of Failure to Maintain the Threshold Operating Characteristics

The Generator shall throughout the Term maintain the following Threshold Operating Characteristics at their respective levels as defined in the relevant subparagraphs of this Section 9.6.7, as applicable.

At any time from (but excluding) the Commercial Operation Date, in the event that pursuant to any Additional Testing or Annual Testing performed in accordance with Section 2.11 and Schedule 17 it is established that any Generating Unit or combination of Generating Units, as applicable, fails to maintain such Threshold Operating Characteristics, the Generator shall be liable, subject to Section 9.9, to pay liquidated damages to EGAT in accordance with Sections 9.6.7(a), 9.6.7(b), 9.6.7(c), 9.6.7(d) and 9.6.7(e).

For the avoidance of doubt, in the event that the Generator is liable to pay liquidated damages to EGAT pursuant to a Generator System Outage associated with a Machine Outage in accordance with Sections 9.6.2, 9.6.3 or 9.6.4, as applicable, the Generator shall not be liable to pay liquidated damages to EGAT in respect of its failure to maintain the Threshold Operating Characteristics of the relevant Generating Unit that is associated with the relevant Generator System Outage.

(a) Failure to maintain the Threshold XYB Unit Minimum Capacity

In the event that the value of the Registered XYB Unit Minimum Capacity for one (1) Generating Unit and/or two (2) Generating Units in operation at the Operating Water Head prevailing at the time of the test is established to be greater than the then applicable threshold value for the XYB Unit Minimum Capacity (the “**Threshold XYB Unit Minimum Capacity**”), being the highest of any Registered XYB Unit Minimum Capacity established for the same number of Generating Unit(s) during all previous Commissioning Testing and Post COD Testing, all values being referred to the same Operating Water Head, the amount of liquidated damages shall be determined as follows:

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Let:  $RegXYBMinCap_1$  be the Registered XYB Unit Minimum Capacity for one (1) Generating Unit in operation at the Operating Water Head prevailing at the time of the test;

$RegXYBMinCap_2$  be the Registered XYB Unit Minimum Capacity for two (2) Generating Units in operation at the Operating Water Head prevailing at the time of the test;

$ConXYBMinCap$  be the Contracted XYB Unit Minimum Capacity for one (1) Generating Unit or two (2) Generating Unit(s) in operation at the Operating Water Head prevailing at the time of the test;

$ThreXYBFacMinCapExc$  be the “**Threshold XYB Facility Minimum Capacity Excess**”, being defined as the maximum value of all XYB Facility Minimum Capacity Excess established during previous Commissioning Testing and Post COD Testing;

$XYBFacMinCapExc$  be the “**XYB Facility Minimum Capacity Excess**”; and

$XYBFacMinCapExcInc$  be the increase in the XYB Facility Minimum Capacity Excess from the then effective value of Threshold XYB Facility Minimum Capacity Excess;

Then:  $XYBFacMinCapExc$   
 $= \text{Max} [(RegXYBMinCap_1 - ContXYBMinCap);$   
 $2 \times (RegXYBMinCap_2 - ContXYBMinCap)]$

$XYBFacMinCapExcInc$   
 $= XYBFacMinCapExc - ThreXYBFacMinCapExc$

Without prejudice to Generator’s liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(ii), payment of liquidated damages in respect of such amount of failure to maintain the relevant Threshold XYB Unit Minimum Capacity shall commence as follows:

- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), on the start date defined in this Section 9.6.7(a); or
- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section

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## 9.9(c)(iii);

in either case such payment being made until the end date.

For the purpose of this Section 9.6.7(a):

- (i) the start date referred to in Section 9.6.7(a)(1) shall be (and including) the date of the establishment of such failure in maintaining the Threshold XYB Unit Minimum Capacity; and
- (ii) the end date shall be (but excluding) the earlier to occur of: (a) the day that such deficiency is remedied; and (b) the date that is three (3) years after the start date defined in this Section 9.6.7(a).

The daily amount of liquidated damages shall be equal to the increase in the XYB Facility Minimum Capacity Excess determined in this Section 9.6.7(a) multiplied by eight (8) hours and the SE Based LD Rate.

Payments of liquidated damages falling due under this Section 9.6.7(a) shall be made monthly in Thai Baht.

(b) Failure to maintain the Threshold Unit Reactive Power

In the event that the value of the Registered Unit Reactive Power for any Generating Unit is established to be less than the then applicable threshold value for the Unit Reactive Power (the “**Threshold Unit Reactive Power**”), being the lowest of any Registered Unit Reactive Power established for the same Generating Unit pursuant to all previous Commissioning Testing and Post COD Testing, the amount of liquidated damages shall be determined on a Unit by Unit basis as follows:

- (I) fifteen (15) US Dollar/kVAR for each lagging kVAR that the Registered Unit Reactive Power falls short of the corresponding Threshold Unit Reactive Power multiplied by the Term End Factor; or
- (II) ten (10) US Dollar/kVAR for each leading kVAR that the Registered Unit Reactive Power falls short of the corresponding Threshold Unit Reactive Power multiplied by the Term End Factor;

where the Term End Factor is defined as follows:

- (aa) if the period from the date on which liquidated damages under this Section 9.6.7(b) shall accrue until the

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Scheduled Termination Date is equal to or greater than five (5) years, then the Term End Factor = 1; or

- (bb) if the period from the date on which liquidated damages under this Section 9.6.7 shall accrue until the Scheduled Termination Date is less than five (5) years, then:

the Term End Factor =  $\text{TermEndDur} / 1826$

Where  $\text{TermEndDur}$  = the number of days between the date on which liquidated damages under this Section 9.6.7 shall accrue and the Scheduled Termination Date.

Without prejudice to Generator's liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(i), payment of the aggregate sum of liquidated damages falling due under this Section 9.6.7(b) shall be made in US Dollars in one (1) single installment as follows:

- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), on the date defined in this Section 9.6.7(b); or
- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section 9.9(c)(iii).

The date referred to in Section 9.6.7(b)(1) shall be the date of establishment of the Registered Unit Reactive Power.

Notwithstanding the above statements, in the event that the establishment of such shortfall in respect of the Registered Unit Reactive Power results from the On-Line Testing conducted by EGAT without any prior notification of conducting such On-Line Testing to the Generator, the Generator may at its sole option elect to pay either:

- (i) where the Generator requests an Additional Testing relating to the Unit Reactive Power, liquidated damages at a monthly rate equal to  $1/156^{\text{th}}$  of the rates specified in paragraphs (I) or (II), as applicable, prorated for the actual number of days comprised in the period starting from (and including) the date of notification of the results of such On-Line Testing by EGAT until (but excluding) any subsequent Additional Testing relating to the Unit Reactive Power; or
- (ii) where the Generator does not request an Additional

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Testing relating to the Unit Reactive Power, liquidated damages in accordance with paragraphs (I) or (II), as applicable.

(c) Failure to maintain ninety percent of the Threshold Unit Loading Rate

In the event that the value of the Registered Unit Loading Rate for any Generating Unit is established to be less than ninety percent (90%) of the then applicable threshold value for the Unit Loading Rate (the “**Threshold Unit Loading Rate**”), being the lesser of:

- (aa) any Registered Unit Loading Rate established pursuant to all previous Commissioning Testing and Post COD Testing for the same Generating Unit, and
- (bb) the Contracted Unit Loading Rate,

the amount of liquidated damages shall be determined on both a Unit by Unit and a daily basis as follows:

Let: UniLoadLD be the liquidated damages resulting from the failure to maintain the Threshold Unit Loading Rate;

RegUniLoad be the Registered Unit Loading Rate;

ConUniLoad be the Contracted Unit Loading Rate;

DaiPUPESupTar be the Daily Per Unit PE Supply Target defined in Paragraph 1(a) of Schedule 10; and

PETar be the effective tariff for Primary Energy for the relevant month;

Then: (I) If:  $0.6 < (\text{RegUniLoad} / 0.9 \times \text{ConUniLoad}) < 1$

Then:

$$\text{UniLoadLD} = 0.002 \times \text{DaiPUPESupTar} \times \text{PETar}$$

(II) If:  $0.2 < (\text{RegUniLoad} / 0.9 \times \text{ConUniLoad}) \leq 0.6$

Then:

$$\text{UniLoadLD} = 0.01 \times \text{DaiPUPESupTar} \times \text{PETar}$$

(III) If:  $0 < (\text{RegUniLoad} / 0.9 \times \text{ConUniLoad}) \leq 0.2$

Then:

$$\text{UniLoadLD} = 0.02 \times \text{DaiPUPESupTar} \times \text{PETar}$$

Notwithstanding the above statements, the liquidated damages payable under any of paragraphs (I), (II) and (III) above shall be paid on an exclusive basis.

Without prejudice to Generator's liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(ii), payment of liquidated damages in respect of such amount of failure to maintain the relevant Threshold Unit Loading Rate shall commence as follows:

- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), on the start date defined in this Section 9.6.7(c); or
- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section 9.9(c)(iii);

in either case such payment being made until the end date.

For the purpose of this Section 9.6.7(c):

- (i) the start date referred to in Section 9.6.7(c)(1) shall be (and including) the date of the establishment of such Registered Unit Loading Rate; and
- (ii) the end date shall be (but excluding) the earlier to occur of: (I) the day that such deficiency is remedied; and (II) the date that is three (3) years after the establishment of such Registered Unit Loading Rate.

Subject to Section 7.3(a), payments of liquidated damages falling due under this Section 9.6.7(c) shall, for such portion of liquidated damages denominated in US Dollars or Thai Baht, be made monthly in the respective currency.

- (d) Failure to maintain ninety percent of the Threshold Unit Deloading Rate

In the event that the value of the Registered Unit Deloading Rate for any Generating Unit is established to be less than ninety percent (90%) of the then applicable threshold value for the Unit Deloading Rate (the "**Threshold Unit Deloading Rate**"), being the lesser of:

- (aa) any Registered Unit Deloading Rate established pursuant to all previous Commissioning Testing and

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Post COD Testing for the same Generating Unit, and

(bb) the Contracted Unit Deloading Rate,

the amount of liquidated damages shall be determined on both a Unit by Unit and a daily basis as follows:

Let: UniDeLoadLD be the liquidated damages resulting from the failure to maintain the Threshold Unit Deloading Rate;

RegUniDeLoad be the Registered Unit Deloading Rate;

ConUniDeLoad be the Contracted Unit Deloading Rate;

DaiPUSESUPTar be the Daily Per Unit SE Supply Target defined in Paragraph 1(a) of Schedule 10; and

SETar be the effective tariff for Secondary Energy for the relevant month;

Then: (I) If:  $0.6 < (\text{RegUniDeLoad} / 0.9 \times \text{ConUniDeLoad}) < 1$

Then:

$$\text{UniDeLoadLD} = 0.002 \times \text{DaiPUSESUPTar} \times \text{SETar}$$

(II) If:  $0.2 < (\text{RegUniDeLoad} / 0.9 \times \text{ConUniDeLoad}) \leq 0.6$

Then:

$$\text{UniDeLoadLD} = 0.01 \times \text{DaiPUSESUPTar} \times \text{SETar}$$

(III) If:  $0 < (\text{RegUniDeLoad} / 0.9 \times \text{ConUniDeLoad}) \leq 0.2$

Then:

$$\text{UniDeLoadLD} = 0.02 \times \text{DaiPUSESUPTar} \times \text{SETar}$$

Notwithstanding the above statements, the liquidated damages payable under paragraphs (I), (II) and (III) above shall be payable on an exclusive basis.

Without prejudice to Generator's liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(ii), payment of liquidated damages in respect of such amount of failure to maintain the relevant Threshold Unit Deloading Rate shall commence as follows:

(1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), on the

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start date defined in this Section 9.6.7(d); or

- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), on the expiry of the Cure Period in accordance with Section 9.9(c)(iii);

in either case such payment being made until the end date.

For the purpose of this Section 9.6.7(d):

- (i) the start date referred to in Section 9.6.7(d)(1) shall be (and including) the date of the establishment of such Registered Unit Deloading Rate; and
- (ii) the end date shall be (but excluding) the earlier to occur of: (I) the day that such deficiency is remedied; and (II) the date that is three (3) years after the establishment of such Registered Unit Deloading Rate.

Payments of liquidated damages falling due under this Section 9.6.7(d) shall be made monthly in Thai Baht.

(e) Failure to maintain the Threshold Unit Primary Response

In the event that the value of the Registered Unit Primary Response for any Generating Unit is established to be less than the then applicable threshold value for the Unit Primary Response (the “**Threshold Unit Primary Response**”), being the lesser of:

- (aa) any Registered Unit Primary Response established pursuant to all previous Commissioning Testing and Post COD Testing for the same Generating Unit, and
- (bb) the Contracted Unit Primary Response,

the amount of liquidated damages shall be determined on a Unit by Unit basis as follows:

Let: UniPrResLD be the liquidated damages resulting from the failure to maintain the Threshold Unit Primary Response;

RegUniPrRes be the Registered Unit Primary Response (in kW);

ThreUniPrRes be the Threshold Unit Primary Response (in kW); and

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PRShort be the shortfall of the Registered Unit Primary Response from the Threshold Unit Primary Response (in kW);

Then:  $PRShort = \text{Max} [(ThreUniPrRes - RegUniPrRes), 0]$

(I) If:  $(RegUniPrRes / ThreUniPrRes) < 0.3$

Then:

$UniPrResLD = PRShort \text{ (kW)} \times 320 \text{ US Dollar}$

(II) If:  $0.3 \leq (RegUniPrRes / ThreUniPrRes) < 1$

Then:

$UniPrResLD = PRShort \text{ (kW)} \times 160 \text{ US Dollar}$

Without prejudice to Generator's liability to pay liquidated damages during the period prior to the expiry of the Cure Period in accordance with Section 9.9(c)(i), payment of the aggregate sum of liquidated damages falling due under this Section 9.6.7(e) shall be made in US Dollars in four (4) equal installments as follows:

- (1) in the event that the Generator elects not to cure the deficiency in accordance with Section 9.9(a)(ii), the first installment shall be made at the end of the month during which such Registered Unit Primary Response is established; or
- (2) in the event that the Generator elects to cure the deficiency in accordance with Section 9.9(a)(i), the first installment shall be made at the end of the month in which the expiry of the Cure Period falls, as provided in accordance with Section 9.9(c)(iii).

The remaining three (3) installments shall be made at the end of the month associated with the anniversary of the date on which the first installment is made.

#### 9.6.8 Delays and Rescheduling of Generator Planned Outages by EGAT

If:

- (a) EGAT shall at any time require that a Generator Planned Outage be rescheduled less than three (3) Full Calendar Months prior to the relevant Scheduled Outage Start Time provided in the Initial First Period Planned Outage Program, the Initial Second Period Planned Outage Program, as applicable, or the Annual Planned Outage Programs defined in Paragraphs

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1.1.1(a), 1.1.1(b) and 1.1.2 of Part I of Schedule 3, respectively;

- (b) The Generator shall object in writing to such rescheduling within the time period of fifteen (15) days thereafter;
- (c) The Parties shall after good faith negotiations fail to agree on a rescheduled date for the relevant Generator Planned Outage and any compensation to the Generator therefor; and
- (d) Nonetheless EGAT shall require and cause such rescheduling;

then EGAT shall compensate the Generator for the costs, expenses and liabilities properly and reasonably incurred by the Generator in respect of the rescheduling by EGAT of the Generator Planned Outage and subject to all reasonable efforts on the part of the Generator to mitigate such loss and excluding any indirect consequential or incidental loss or damage on the part of the Generator, provided that EGAT shall not require and cause such rescheduling if the objection provided by the Generator referred to in Section 9.6.8(b) states that, in the Generator's opinion (such determination to be made reasonably), such rescheduling will cause damage to the Generator System or injury to personnel employed by or providing service to the Generator and provided that such objection shall include a statement of the reasons for and the basis of such determination by the Generator and the Generator shall provide EGAT with any evidence in support of such determination that EGAT may reasonably require.

#### 9.6.9 Liquidated Damages in respect of Exceptional Outage

- (a) For the purpose of calculating the liquidated damages arising out of an Exceptional Outage as provided in Paragraph 2 of Part I of Schedule 20 and Paragraph 1.7 of Part I of Schedule 3, in respect of each Committed Energy Component, the Monthly Unavailability that is used as the basis to calculate the liquidated damages associated with such Exceptional Outage shall be calculated on the basis of Daily Per Unit Supply Target in the same way as the equations provided in Paragraph 1(a)(1) of Schedule 10, and the applicable rate of liquidated damages shall be equal to the sum of:
  - (I) 23.7% of the tariff applicable to the relevant Committed Energy Component for the relevant month; and
  - (II) 70% of 0.94 US Cent/kWh.
- (b) Subject to Sections 9.6.9(c) and 9.6.9(d), during the period when an Exceptional Outage occurs and is continuing, the Generator shall be entitled to defer the payment of part or all of the liquidated damages associated with the Exceptional Outage

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due to EGAT. EGAT shall have the right to recover such amount of deferred payment (as adjusted from time to time by prior recoveries and by the accrued interest in respect of the unpaid portion of the deferred payment from the respective date that such liquidated damages accrue until payment thereof at the Default Rate) from the Generator at any time upon the termination of such Exceptional Outage provided that all the following conditions are satisfied:

- (i) The Generator has available cash after deducting:
  - (1) all amounts then required to fund the debt service reserve account and all other reserve and project accounts required to be maintained by the Generator under the Financing Documents up to their respective required balances; and
  - (2) all project costs (including, without limitation, capital expenditure, operating expenses and taxes) and debt service then due and payable (including any prepayments required or permitted under the Financing Documents); and
- (ii) any repayment of liquidated damages associated with such Exceptional Outage to EGAT would not reduce the Generator's available cash (excluding available balances in the debt service reserve account and all other reserve and project accounts required to be maintained by the Generator under the Financing Documents) below the amount of cash required to ensure compliance with the debt service cover ratio (if any) required to be maintained by the Generator under the Financing Documents without triggering the occurrence of a default under the Financing Documents.

All details related to the conditions provided in this Section 9.6.9(b) shall be fixed prior to the Financial Close Date.

- (c) Once the total Unavailability arising pursuant to an Exceptional Outage reaches or exceeds 2,000 GWh, EGAT may by written notice to the Generator require the Generator to make monthly payment for any further liquidated damages associated with such Unavailability that is beyond 2,000 GWh, which payment the Generator shall not be entitled to defer.
- (d) Notwithstanding the conditions provided under Section 9.6.9(b), the Generator shall repay all deferred payment in respect of the liquidated damages associated with any Exceptional Outage incurred under Section 9.6.9 to EGAT within a period of thirty (30) Full Calendar Months after the

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cessation of the Exceptional Outage or on the Term Termination Date, whichever occurs earlier.

### 9.7 Payments from the Securities

- (a) To the extent that EGAT is owed compensation for: (i) liquidated damages pursuant to Section 9.5; (ii) Force Majeure Offset Amounts; and/or (iii) any damages as a result of termination of this Agreement prior to the Commercial Operation Date pursuant to Sections 10.2.3 or 11.8.5, as the case may be, and that EGAT has previously not been completely compensated therefor, appropriate amounts of the Development Security, including any interest thereon, shall be drawn down and retained by EGAT as compensation.
- (b) To the extent that EGAT is owed compensation after the Commercial Operation Date and during the remainder of the Term for: (i) liquidated damages pursuant to Section 9.6; (ii) Force Majeure Offset Amounts; (iii) any damages as a result of termination of this Agreement pursuant to Sections 10.2.3 or 11.8.5, as the case may be; and/or (iv) any damages as a result of the Generator's breach of any of its obligations under this Agreement (other than those obligations for which liquidated damages are paid as compensation), and that EGAT has previously not been completely compensated therefor, appropriate amounts of the Performance Security, including interest thereon, shall be drawn down and retained by EGAT as compensation.
- (c) The exercise by EGAT of its rights to draw down any of the Securities and retain the drawn amount as compensation and the performance by EGAT of its obligation to return any of the Securities to the Generator shall not prejudice the rights of EGAT to claim compensation for liquidated damages, Force Majeure Offset Amounts or other damages arising from the breach by the Generator of its obligations under this Agreement, other than with respect to that portion of those amounts due and owing by the Generator to EGAT for which EGAT has already obtained compensation from the Generator hereunder, including through its exercise of such rights to draw down the Securities and retain the drawn amount as compensation.

### 9.8 Reasonableness of Liquidated Damages

- (a) Each of the Parties acknowledges that the non-breaching Party will suffer substantial loss and damage upon occurrence of the events which give rise to the payment of liquidated damages to it pursuant to this Section 9 and that, where actual damages that will occur due to the failure of the breaching Party to perform its obligations hereunder are difficult to determine and liquidated damages have been set forth therefor herein, such liquidated damages:

- (i) shall represent reasonable, genuine and appropriate measures of

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the damages that would be incurred by it as the result of the occurrences of such events; and

- (ii) do not represent a penalty imposed or incurred by either Party as a result of such failures;

and accordingly each Party hereby waives any defense as to the validity of any obligation to pay any such amounts on the grounds that such obligations are void as giving rise to any penalty or otherwise howsoever.

- (b) The payment of liquidated damages by either Party pursuant to any provision of this Section 9 shall be in full satisfaction of such Party's liability to the other Party in respect of the matters giving rise to the payment of the liquidated damages but shall otherwise be without prejudice to the right of the non-defaulting Party to claim damages due to other breaches of this Agreement for which liquidated damages are not specified as the sole and exclusive remedy or to terminate this Agreement in accordance with the Sections 10.1 and 10.2, as applicable.

Where in this Agreement the payment of liquidated damages pertains to the satisfaction of a Contracted Operating Characteristic or Registered Operating Characteristic, such payment shall completely satisfy the Generator's obligation to achieve such Contracted Operating Characteristic or to maintain the respective Threshold Operating Characteristic, and the Generator shall have no further liability or obligation whatsoever to EGAT in respect thereof.

#### 9.9 Right to Cure, Cure Period and Liquidated Damages during the Cure Period

- (a) If, upon completion of a Commissioning Testing, an Annual Testing or an Additional Testing, and for reasons attributable to the Generator, the Generator fails to achieve any Contracted Operating Characteristic or to maintain any Threshold Operating Characteristic, as applicable, then, the Generator may, at its option, elect to either:
  - (i) subject to Sections 9.9(b) and 9.9(c), make, within the time defined for cure (the "**Cure Period**") for any deficiency in respect of the relevant Contracted Operating Characteristic or Threshold Operating Characteristic, as applicable, such changes, modifications and/or additions to the Generator System or any part thereof that are necessary to attain the Contracted Operating Characteristic or Threshold Operating Characteristic, at its cost and expense; or
  - (ii) pay liquidated damages to EGAT in respect of the failure to meet the relevant Contracted Operating Characteristic or the relevant

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Threshold Operating Characteristic in accordance with the provisions of Sections 9.5 and 9.6, respectively.

- (b) In case the Generator elects to cure in accordance with Section 9.9(a)(i), the Generator shall propose: (1) the date starting from which it is ready to cure the relevant deficiency; and (2) the expected duration of the Cure Period to EGAT, and EGAT shall notify the Generator of the date that EGAT agree for such Cure Period to commence, such agreement not to be unreasonably withheld or delayed. For any event giving rise to liquidated damages referred to in Sections 9.5.7, 9.5.8, 9.6.1 and 9.6.7, the Cure Period shall be no greater than fifteen (15) Full Calendar Months, commencing on the day agreed by EGAT.
- (c) In case the Generator elects to cure in accordance with Section 9.9(a)(i), payment of liquidated damages under Sections 9.5 and 9.6 shall be as follows:
- (i) for any event giving rise to liquidated damages referred to in Sections 9.5.7, 9.5.8(b), 9.5.8(e), 9.6.1, 9.6.7(b) and 9.6.7(e), the Generator shall pay liquidated damages prior to the expiry of the Cure Period at a monthly rate equal to  $1/156^{\text{th}}$  of the aggregate sum of liquidated damages determined in respect of such deficiency under the relevant provisions in respect of each month of the following periods:
- (1) from (and including) the relevant date for which the Generator is liable for paying such sum of liquidated damages should it elect not to cure the relevant deficiency until (but excluding) the date of notification by the Generator starting from which the Generator is ready to cure the relevant deficiency; and
- (2) from (and including) the commencement of the Cure Period until (but excluding) the earlier of: (I) the date of remedy of the deficiency; and (II) the end of the Cure Period.

Where applicable the liquidated damages shall be accounted on daily basis by dividing the monthly rate above by thirty (30).

In the event that EGAT postpones the commencement date of the Cure Period as proposed by the Generator, no liquidated damages shall be payable by the Generator from the date starting from which the Generator is ready to cure the relevant deficiency up to the day immediately preceding the actual commencement date of the Cure Period;

- (ii) for any other event giving rise to liquidated damages referred to in Sections 9.5.8 and 9.6.7, as applicable, the Generator shall pay liquidated damages prior to the expiry of the Cure Period at such

rate as determined in accordance with the relevant paragraph of Sections 9.5.8 and 9.6.7 in respect of the following periods:

- (1) from (and including) the relevant start date until (but excluding) the date starting from which the Generator is ready to cure the relevant deficiency; and
- (2) from (and including) the commencement of the Cure Period until (but excluding) the earlier of: (I) the date of remedy of the deficiency; and (II) the end of the Cure Period.

In the event that EGAT postpones the commencement date of the Cure Period as proposed by the Generator, no liquidated damages shall be payable by the Generator from the date starting from which the Generator is ready to cure the relevant deficiency up to the day immediately preceding the actual commencement date of the Cure Period; and

- (iii) if the deficiency is not cured or partially cured, as established pursuant to the Additional Testing to be performed after the cure or the expiry of the Cure Period, as applicable, liquidated damages shall be payable by the Generator from the date following the cure or the end of the Cure Period, as applicable, at the full rate determined in respect of such residual deficiency at that time under the relevant provisions in the same manner as provided in Section 9.9(a)(ii).

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**10. DEFAULT AND TERMINATION****10.1 EGAT Event of Default and Termination by the Generator**

10.1.1 Other than to the extent caused by an act by or an omission of the Generator or due to or resulting from Force Majeure affecting EGAT, each of the following events, conditions or circumstances at any time during the Term shall constitute a breach of this Agreement on the part of EGAT (each such event being an “EGAT Event of Default”):

- (a) EGAT fails to make payment of any undisputed amount due and payable to the Generator under this Agreement (including, without limitation, any undisputed amount due and payable in respect of any liquidated damages or Force Majeure Offset Amounts), and such failure continues unremedied after the expiration of thirty (30) days following the date on which the Generator shall have given written notice to EGAT of its failure to make such payment;
- (b) EGAT dissolves or liquidates (other than, and without prejudice to the general applicability of subsection 10.1.1(c) hereof, voluntary dissolution or liquidation as part of a reorganization, privatization or reincorporation);
- (c) EGAT is reorganized, restructured, corporatized, privatized, reincorporated or abolished by law or any other action of any Thai Governmental Authority and such reorganization, restructuring, corporatization, privatization, reincorporation or abolishment results in another Person succeeding EGAT as a Party to this Agreement which satisfies none of the following requirements, such requirements being:
  - (i) such Person is owned or controlled by the Government of Thailand;
  - (ii) such Person has the legal status and the technical and financial capability to perform the material obligations of EGAT under this Agreement; and
  - (iii) such Person is reasonably acceptable to the Generator,and, for the avoidance of doubt, such reorganization, restructuring, corporatization, privatization, reincorporation or abolishment shall not constitute an EGAT Event of Default if the Person succeeding EGAT satisfies one or more of the above requirements;
- (d) except as otherwise permitted in accordance with Section 17.4, EGAT makes a general assignment of its interest in the

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Generator System or any portion thereof or of this Agreement or any of its rights hereunder;

- (e) EGAT enters into voluntary insolvency or is adjudicated bankrupt or insolvent under any insolvency law as debtor; or a receiver, administrator or equivalent Person is appointed in respect of EGAT or a substantial part of its assets, business or undertakings;
- (f) EGAT either fails to achieve or, at any time prior to the Scheduled Energization Date, it is demonstrated that, notwithstanding its best efforts, EGAT will be unable to achieve the Acceptance Dates of the Certificates of Readiness for Energization of the EGAT Subsystems (i) to (vii) either:
- (i) in the event that EGAT has not claimed any EGAT Force Majeure referred to in Section 2.1.7(c) or the aggregate duration of all such EGAT Force Majeure referred to in Section 2.1.7(c) does not exceed three hundred and sixty-five (365) days, within five hundred and forty (540) days after the Scheduled Energization Date, as such date may have been extended pursuant to Section 8.3.1; or
- (ii) in the event that the aggregate duration of all such EGAT Force Majeure referred to in Section 2.1.7(c) exceeds three hundred and sixty-five (365) days, within a period after the Scheduled Energization Date, as such date may have been extended pursuant to Section 8.3.1, the duration of such period being equal to five hundred and forty (540) days reduced, day-for-day, by the number of days that the aggregate duration of all such EGAT Force Majeure is in excess of three hundred and sixty-five (365) days;
- (g) Other than the obligations specifically enumerated by Subsections (a) through (f) of this Section 10.1.1 and the obligation to meet a Milestone Date, EGAT fails to perform or comply with any of its other obligations under this Agreement (including a breach of the representations and warranties EGAT has provided herein as set forth in Section 15.2), when such failure has a Material Adverse Effect on the Generator. For the avoidance of doubt, a breach of this Agreement for which amounts are payable by way of compensation under Section 9 shall not in and of itself constitute a Material Adverse Effect on the Generator unless such breach (either singly or in combination with the effects of other breaches, including other breaches for which amounts are payable by way of compensation under Section 9) results in a degree of effect on

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the Generator's ability to exercise its rights or to perform its obligations under this Agreement or a degree of deprivation of the Generator's benefits under this Agreement that would be sufficient to constitute a Material Adverse Effect.

10.1.2 In addition to any other relief afforded to the Generator by virtue of one or more EGAT Events of Default (including EGAT's payment of liquidated damages and/or Force Majeure Offset Amounts, as applicable), but subject to the requirements of Section 10.6, the Generator may (but shall not be required to) in its sole discretion terminate this Agreement in accordance with the following:

- (a) The Generator shall be entitled to terminate this Agreement immediately or at any time thereafter by written notice to EGAT upon the occurrence of any one or more of the EGAT Events of Default set forth in Subsections (a), (b), (d), (e) and (f) of Section 10.1.1; provided that, for so long as the Financing Documents are in effect, with respect to an EGAT Event of Default resulting from a failure by EGAT to pay Force Majeure Offset Amounts to the Generator, the Generator shall not: (i) exercise any right to terminate this Agreement; (ii) suspend its performance of its obligations under this Agreement; (iii) take any insolvency action; or (iv) enforce any remedies provided under this Agreement, in each case until the expiry of a period of one hundred and eighty (180) days after the date on which such termination right first arises in accordance with this Section 10.1.2(a) and, notwithstanding such 180-day period provided herein but subject to Sections 10.1.3, 10.2.3, 11.7.5, 11.8.5 and 11.9.3, EGAT shall remain liable to pay all Unpaid EGAT FMOA to the Generator (together with all interest accrued thereon) and the due date for payment of such Unpaid EGAT FMOA by EGAT to the Generator shall be neither affected nor deferred; provided further that: (1) any failure to pay any default interest accrued in respect of the Unpaid EGAT FMOA shall not constitute a separate EGAT Event of Default; and (2) in the event that the EGAT Event of Default arising from the failure to pay the Unpaid EGAT FMOA (including any unpaid default interest) has been remedied within such 180-day period, the Generator shall not exercise any right of termination, suspension or enforcement by reason of such EGAT Event of Default following such remedy; and
- (b) upon the occurrence of an EGAT Event of Default under Sections 10.1.1(c) and 10.1.1(g), the Generator shall give written notice to EGAT describing the relevant EGAT Event of Default and EGAT shall be given sixty (60) days from the receipt of such notice to cure such EGAT Event of Default. Whenever EGAT has been provided an opportunity to cure an EGAT Event of Default, EGAT shall remain liable to pay any

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liquidated damages and Force Majeure Offset Amounts that EGAT incurs under this Agreement both prior to and during the cure period to the Generator and EGAT shall keep the Generator informed of the progress of such cure efforts. If the occurrence of such an EGAT Event of Default cannot be cured within sixty (60) days with the exercise of reasonable endeavors on the part of EGAT, EGAT shall be provided such additional cure period as is reasonably required for EGAT to cure such EGAT Event of Default with the exercise of reasonable endeavors, provided that such additional cure period shall not exceed one hundred and twenty (120) days, and provided further that such additional cure period shall only be extended to EGAT for so long as EGAT, throughout such additional cure period, exercises reasonable and continuous endeavors to cure that EGAT Event of Default and EGAT continues to perform all of its other obligations under this Agreement. The Generator may (but shall not be required to) in its sole discretion grant any additional period of time as it deems appropriate for EGAT to cure any EGAT Event of Default. If EGAT fails to remedy the EGAT Event of Default within the applicable cure period, then the Generator may, in addition to any other rights and remedies available to it, immediately terminate this Agreement by written notice to EGAT.

- 10.1.3 Other than as provided pursuant to Section 17.12.2(b), upon termination of this Agreement by the Generator pursuant to Section 10.1.2, and without affecting the liability of either Party to pay any liquidated damages and other amounts (including all Unpaid EGAT FMOA pursuant to a Thai Political Force Majeure and all Unpaid Generator FMOA pursuant to a Lao Political Force Majeure but excluding all other Force Majeure Offset Amounts) which may have accrued under this Agreement up to the Term Termination Date, EGAT shall pay to the Generator the Termination Payment and EGAT shall simultaneously thereupon acquire the ownership of the Generator Assets from the Generator through the EGAT Designated Assignee, all in accordance with and subject to the terms of Section 17.12 and Schedule 9.

## 10.2 Generator Event of Default and Termination by EGAT

- 10.2.1 Other than to the extent caused by an act by or an omission of EGAT or due to or resulting from Force Majeure affecting the Generator, each of the following events, conditions or circumstances at any time during the Term shall constitute a breach of this Agreement on the part of the Generator (each such event being a “**Generator Event of Default**”):

- (a) either: (i) the Generator fails to make payment of any undisputed amount due and payable to EGAT under this

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Agreement (including, without limitation, any undisputed amount due and payable in respect of any liquidated damages or Force Majeure Offset Amounts); or (ii) the Generator fails to replenish the Performance Security in accordance with this Agreement after EGAT draws down such Performance Security, and such failure to make payment or to replenish the Performance Security continues unremedied after the expiration of thirty (30) days following the date on which EGAT shall have given written notice to the Generator of its failure to make such payment or to replenish such Performance Security;

- (b) the Generator dissolves or liquidates (other than voluntary dissolution or liquidation as part of a reorganization or reincorporation);
- (c) except as otherwise permitted in accordance with Sections 9.4 and/or 17.4, as the case may be, the Generator makes a general assignment of its interest in the Generator System or any portion thereof or of this Agreement or any of its rights hereunder;
- (d) the Generator enters into voluntary insolvency or is adjudicated bankrupt or insolvent under any insolvency law as debtor; or a receiver, administrator or equivalent Person is appointed in respect of the Generator or a substantial part of its assets, business or undertakings;
- (e) the Generator fails to achieve the Financial Close Date within one hundred and eighty (180) days after the Scheduled Financial Close Date, as such date may have been extended pursuant to Section 8.3.2;
- (f) the Generator fails to achieve the First Payment Date by the Scheduled First Payment Date;
- (g) in the event that the Generator abandons the engineering, design, construction, operation and/or maintenance of the Generator System for forty-five (45) consecutive days or longer, and after having received a written notice from EGAT the Generator fails to:
  - (i) indicate, within ten (10) days after having received such written notice from EGAT, its intent to resume such activities within a period of time agreeable to EGAT; and
  - (ii) resume such activities within such agreed period of time;

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- (h) the Generator either fails to achieve or, at any time prior to the Scheduled Commercial Operation Date, it is demonstrated that, notwithstanding its best efforts, the Generator will be unable to achieve the Commercial Operation Date within five hundred and forty (540) days after the Scheduled Commercial Operation Date, as such date may have been extended pursuant to Section 8.3.1;
- (i) other than destruction and damage caused by Force Majeure, upon the destruction or damage to the Generator System which reduces the generating capacity of the Generator System at the Delivery Point below the Capacity Default Threshold and, prior to any material works being carried out by the Generator to remedy such destruction or damage, it is agreed to by the Parties or, in the absence of such agreement, it is decided by arbitration in accordance with Section 13, that it is unlikely that the Generator System will be restored such that the generating capacity of the Generator System at the Delivery Point is equal to or greater than the Capacity Default Threshold within a restoration period equal to or less than thirty (30) Full Calendar Months after the date on which such restoration commences, provided always that the Generator System would, upon the completion of any such restoration, have regained generating capacity at least equal to the Capacity Default Threshold and is again capable of achieving in each Contract Year thereafter Machine Availability of no less than 6,400 GWh;
- (j) regardless of whether or not such destruction or damage is caused by Force Majeure, the Generator fails to complete the restoration to the Generator System or fails to cause such restoration to be completed within the applicable restoration period therefor (the “**Restoration Period**”) upon any destruction or damage to the Generator System which reduces the generating capacity of the Generator System at the Delivery Point below the Capacity Default Threshold such that the Generator System: (i) is able by the end of that Restoration Period to provide generating capacity at the Delivery Point which is equal to or greater than the Capacity Default Threshold; and (ii) has regained capability of achieving in each Contract Year thereafter the Machine Availability of no less than 6,400 GWh; provided that such Restoration Period referred to above shall be determined prior to any material works in that respect being carried out by the Generator as follows:
- (A) in the case of any destruction or damage to the Generator System due to causes other than Force Majeure, such Restoration Period shall be the period that has been agreed to by the Parties or, in the absence

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of such agreement, that has been decided by arbitration in accordance with Section 13, that it is likely that the restoration work performed within such Restoration Period shall, with the exercise of reasonable endeavors on the part of the Generator, restore the Generator System such that: (AA) the generating capability of the Generator System at the Delivery Point is equal to or greater than the Capacity Default Threshold; and (BB) the Generator System is capable of achieving in each Contract Year thereafter the Machine Availability of no less than 6,400GWh; provided further that the Restoration Period for such case shall:

- (i) be equal to or less than thirty (30) Full Calendar Months; and
  - (ii) commence on the date on which such period is either agreed to by the Parties or is otherwise determined in accordance with Section 13 as set forth above; or
- (B) in the case of any destruction or damage to the Generator System due to Force Majeure, provided that it has been either agreed by the Parties or, in the absence of such agreement, decided by arbitration in accordance with Section 13 at the time such destruction or damage was incurred that the restoration of such destruction or damage is reasonably expected to be within the respective period specified in Section 11.11(d) for the respective Force Majeure, such Restoration Period shall be the period that is identified in a written notification provided to EGAT by the Generator pursuant to Section 11.2, provided further that the Restoration Period for such case shall:
- (i) be equal to or less than:
    - (1) twenty-four (24) Full Calendar Months for destruction or damage caused by a Thai Political Force Majeure or a Lao Political Force Majeure; or
    - (2) thirty (30) Full Calendar Months for destruction or damage caused by any other Force Majeure; and
  - (ii) commence on the date identified in such notification provided to EGAT by the Generator,

that Restoration Period being extended by:

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- (aa) any Force Majeure occurring during the duration thereof and claimed by the Generator in accordance with Section 11 hereof which affects the restoration efforts of the Generator and which, where that Restoration Period arises in respect of any destruction or damage due to a Force Majeure, is unrelated to the Force Majeure which caused the damage or destruction to which that Restoration Period relates; and
- (bb) any agreement by the Parties to extend that Restoration Period prior to what would otherwise have been the expiry date thereof;
- (k) at any time after the Commercial Operation Date, the Generator reduces the water supply, or the potential thereof, that can be used to generate electrical energy by and from the Facility for the EGAT System, including: (a) installing generating units, including additional generating units in the Generator-EdL System, that use the water supply which could have been used to generate electrical energy by and from the Facility for the EGAT System without obtaining EGAT's prior agreements; or (b) releasing or spilling water from the Pondage other than: (i) for the purpose of producing electrical energy for delivery to the Delivery Point for the EGAT System in accordance with the terms and conditions of this Agreement, (ii) for the purposes set out in this Agreement, including for the purposes of carrying out testing (inter alia Commissioning Testing) or maintenance contemplated by this Agreement; (iii) as necessary to protect the physical integrity of the Generator System, to protect the health and safety of the public and the Generator's personnel and/or to ensure conservation and protection of the environment; (iv) due to damage or destruction to the Generator System for which a Restoration Period is current or applied during the restoration of the same in accordance with Section 10.2.1(j); or (v) as agreed by EGAT from time to time;
- (l) in any two (2) consecutive twelve month Contract Years, the Machine Availability of the Facility for each such Contract Year is less than 6,400 GWh but excluding for this purpose any period where that reduction is due to any damage or destruction of the Generator System which was, or is in the course of being, restored during any Restoration Period in accordance with Section 10.2.1(j);
- (m) there is a transfer of an equity interest in the Generator not in compliance with the requirements of Section 17.11;
- (n) a Derating of the Facility occurs, which is not due to any damage or destruction of the Generator System for which a

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Restoration Period is current for the restoration of the same in accordance with Section 10.2.1(j), such that either:

- (1) the Initial Registered Capacity; or
- (2) the Registered Capacity at any time during the Term pursuant to the Annual Testing in accordance with Section 2.11,

shall be less than the Capacity Default Threshold and either:

- (A) within sixty (60) days after a determination of such Derating, the Generator gives written notice to EGAT that it does not intend to cure the Derating (so that the Registered Capacity is restored to not less than the Capacity Default Threshold) or fails to give any notice of intention to cure such Derating; or
  - (B) at any time within the period of five hundred and forty (540) days from the date of delivery by the Generator to EGAT of a written notice of intention to cure the Derating, the Generator gives a further written notice to EGAT declaring such Derating to be permanent (so that the Registered Capacity shall not be restored to a level equal to or above the Capacity Default Threshold); or
  - (C) upon the expiry of the period of five hundred and forty (540) days from the date of delivery by the Generator to EGAT of a written notice of intention to cure the Derating, the Generator fails to cure such Derating (so that the Registered Capacity of the Facility is restored to a level equal to or above the Capacity Default Threshold);
- (o) the Generator sells electrical energy produced by the Facility to any third party (regardless of location) other than as permitted by Section 3.13;
- (p) a Breach of Contract by the Generator under the Concession Agreement or a breach by the Generator under the Lease Agreement occurs and is not cured within the time period (if any) permitted in the Concession Agreement or the Lease Agreement, as applicable, pursuant to which a Company Termination Event under the Concession Agreement or a termination event under the Lease Agreement occurs and the GOL is entitled to issue a notice of intention to terminate the Concession Agreement or the Lease Agreement, as applicable (regardless of whether or not such notice of intention is or has been issued);

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Default and TerminationSection 10

- (q) other than the obligations specifically enumerated by Subsections (a) through (q) of this Section 10.2.1 and the obligation to meet a Milestone Date, the Generator fails to perform or comply with any of its other obligations under this Agreement (including a breach of the representations and warranties the Generator has provided herein as set forth in Section 15.1), when such failure has a Material Adverse Effect on EGAT. For the avoidance of doubt, a breach of this Agreement for which amounts are payable by way of compensation under Section 9 shall not in and of itself constitute a Material Adverse Effect on EGAT unless such breach (either singly or in combination with the effects of other breaches, including other breaches for which amounts are payable by way of compensation under Section 9) results in a degree of effect on EGAT's ability to exercise its rights or to perform its obligations under this Agreement or a degree of deprivation of EGAT's benefits under this Agreement that would be sufficient to constitute a Material Adverse Effect.

10.2.2 In addition to any other relief afforded to EGAT by virtue of one or more Generator Events of Default (including the Generator's payment of liquidated damages and/or Force Majeure Offset Amounts, as applicable), but subject to Section 10.6, EGAT may (but shall not be required to) in its sole discretion terminate this Agreement in accordance with the following:

- (a) EGAT shall be entitled to terminate this Agreement immediately or at any time thereafter by written notice to the Generator upon the occurrence of any one or more of the Generator Events of Default set forth in Subsections (a), (b), (c) (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o) and (p) of Section 10.2.1; provided that, for so long as the Financing Documents are in effect, with respect to a Generator Event of Default resulting from a failure by the Generator to pay Force Majeure Offset Amounts to EGAT (including a Generator Event of Default resulting from a failure of the Generator to replenish the Performance Security in accordance with this Agreement after EGAT draws down such Performance Security in association with the Generator's liability to pay FMOA to EGAT), EGAT shall not: (i) exercise any right to terminate this Agreement; (ii) suspend its performance of its obligations under this Agreement; (iii) take any insolvency action; (iv) enforce any remedies provided under this Agreement; or (v) exercise its security interest against or in any of the property of the Generator (unless the Lenders have first exercised their own security interests thereto pursuant to the Financing Documents), in each case until the expiry of a period of one hundred and eighty (180) days after the date on which such termination right first arises in accordance with this Section 10.2.2(a) and,

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notwithstanding such 180-day period provided herein but subject to Sections 10.1.3, 10.2.3, 11.7.5, 11.8.5 and 11.9.3, the Generator shall remain liable to pay all Unpaid Generator FMOA to EGAT (together with all interest accrued thereon) and the due date for payment of such Unpaid Generator FMOA by the Generator to EGAT shall be neither affected nor deferred; provided further that: (1) any failure to pay any default interest accrued in respect of the Unpaid Generator FMOA shall not constitute a separate Generator Event of Default; and (2) in the event that the Generator Event of Default arising from the failure to pay the Unpaid Generator FMOA (including any unpaid default interest) has been remedied within such 180-day period, EGAT shall not exercise any right of termination, suspension or enforcement by reason of such Generator Event of Default following such remedy; and

- (b) upon the occurrence of a Generator Event of Default under Subsection (q) of Section 10.2.1, EGAT shall give written notice to the Generator describing the relevant Generator Event of Default and the Generator shall be given sixty (60) days from the receipt of such notice to cure such Generator Event of Default. Whenever the Generator has been provided an opportunity to cure a Generator Event of Default, the Generator shall remain liable to pay any liquidated damages and Force Majeure Offset Amounts that the Generator incurs under this Agreement both prior to and during the cure period to EGAT and the Generator shall keep EGAT informed of the progress of the cure efforts. If the occurrence of such a Generator Event of Default cannot be cured within sixty (60) days with the exercise of reasonable endeavors on the part of the Generator, the Generator shall be provided such additional cure period as reasonably required for the Generator to cure such Generator Event of Default with the exercise of reasonable endeavors, provided that such additional cure period shall not exceed one hundred and twenty (120) days, and provided further that such additional cure period shall only be extended to the Generator for so long as the Generator, throughout such additional cure period, exercises reasonable and continuous endeavors to cure that Generator Event of Default and the Generator continues to perform all of its other obligations under this Agreement. EGAT may (but shall not be required to) in its sole discretion grant any additional period of time as it deems appropriate for the Generator to cure any Generator Event of Default. If the Generator fails to remedy the Generator Event of Default within the applicable cure period (such cure period to exclude any period during which and to the extent that the Generator is unable to continue its remedial efforts as a result of EGAT having exercised its rights pursuant to Section 10.3), then EGAT may, in addition to any other rights and remedies

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available to it, immediately terminate this Agreement by written notice to the Generator.

10.2.3 Upon termination of this Agreement by EGAT pursuant to Section 10.2.2 and without affecting the liability of either Party to pay any liquidated damages, any compensation and other amounts (including all Unpaid EGAT FMOA pursuant to a Thai Political Force Majeure and all Unpaid Generator FMOA pursuant to a Lao Political Force Majeure but excluding all other Force Majeure Offset Amounts) which may have accrued under this Agreement up to the Term Termination Date, EGAT shall notify the Generator in writing within ninety (90) days after the Term Termination Date of EGAT's election to either:

- (a) require the Generator to make the Termination Payment due to EGAT without EGAT acquiring the ownership of the Generator Assets from the Generator; or
- (b) acquire the ownership of the Generator Assets from the Generator through the EGAT Designated Assignee simultaneously upon payment by EGAT to the Generator of the Termination Payment,

in which event, depending upon the election which EGAT makes, the Termination Payment shall be made and that acquisition, if so elected by EGAT, shall occur all in accordance with and subject to the terms of Section 17.12 and Schedule 9. In the event that EGAT elects to require the Generator to make the Termination Payment due to EGAT as provided in paragraph (a) above but the Generator fails to make such Termination Payment, for any reason, then EGAT shall be entitled to either:

- (i) acquire the ownership of the Generator Assets from the Generator through the EGAT Designated Assignee simultaneously upon payment by EGAT to the Generator of the Termination Payment as determined in accordance with Schedule 9 in lieu of requiring the Generator to make the Termination Payment due to EGAT as required under paragraph (a) above; or
- (ii) preserve and pursue its claims for Termination Payment, liquidated damages, compensation and other amounts provided in this Section 10.2.3 hereabove and other contractual relief and damages regarding the Generator's failure to make the Termination Payment to EGAT as required under paragraph (a) above.

### 10.3 Step-In Rights

10.3.1 On or after the Commercial Operation Date, upon the occurrence and

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continuance of a Generator Event of Default involving the operation and maintenance of the Generator System and/or repair of damaged equipment or facilities thereof and that could be cured through improved operations, maintenance and repair of same, and, in the case of any such Generator Event of Default for which the Generator is entitled to a period of time within which to remedy such Generator Event of Default pursuant to Section 10.2.2(b), either:

- (a) such Generator Event of Default has not been remedied by the expiry of the applicable cure period under Section 10.2.2(b) and any additional period that EGAT has extended to the Lenders to remedy such Generator Event of Default pursuant to the consent to the assignment of this Agreement to the Lenders as security under the Financing Documents as required pursuant to Section 17.4.3(a)(i); or
- (b) the Generator is not diligently proceeding to remedy such Generator Event of Default during the applicable cure period under Section 10.2.2;

then EGAT shall have the right, but under no circumstances the obligation, to obtain access to the relevant portion of the Generator System, as required, and to assume responsibility for those aspects of the operation, maintenance and/or repair (in the capacity of an operation, maintenance and/or repair contractor only) for that portion of the Generator System as is required in order for EGAT to effectuate the remedial measures regarding the operation, maintenance and repair of the Generator System as are required or otherwise appropriate to remedy the Generator Event of Default that justified the exercise by EGAT of its step-in rights hereunder; provided that:

- (i) for so long as the Financing Documents remain in effect, regardless of whether such Generator Event of Default falls within Sections 10.2.2(a) or 10.2.2(b), EGAT shall not exercise its step-in rights under this Section 10.3 without first obtaining the consent of the Lenders, such consent not to be unreasonably withheld or delayed;
- (ii) to the extent that the Lenders do consent to the exercise by EGAT of its step-in rights hereunder, such step-in rights shall be exercised by EGAT upon such terms as are mutually agreed between the Lenders and EGAT at that time;
- (iii) EGAT shall give the Generator not less than three (3) Business Days prior written notice of its intention to exercise its step-in rights under this Section 10.3 as well as reasonable details as to the particular Generator Event of Default to be remedied, the particular portion of the Generator System in respect of which such step-in rights are to be exercised and whether the step-in rights to be exercised involve the operation, maintenance

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and/or repair of the Generator System; and

- (iv) in the event that EGAT assumes responsibility for the day-to-day operation and/or maintenance of the equipment and facilities comprising the Generator System, EGAT must assume such day-to-day operational responsibility and/or maintenance for the entire Generator System.

The Generator shall use its reasonable efforts to cause the Lenders specifically to acknowledge such right of EGAT under this Section 10.3.1 in the Financing Documents. EGAT may require issues and conditions in addition to those addressed in this Section 10.3 to be clarified to EGAT's reasonable satisfaction before EGAT exercises the step-in rights provided hereunder.

10.3.2 If EGAT exercises its rights to assume responsibility for the operation, maintenance and/or repairs for the Generator System or any portion thereof pursuant to this Section 10.3, the Generator shall:

- (a) authorize EGAT or its designated agent or contractor, within seven (7) Business Days after EGAT notifies the Generator of the exercise of its step-in rights in accordance with Section 10.3.1, to exercise such rights under the applicable Project Agreements as are necessary therefor;
- (b) take all steps necessary to permit EGAT to exercise the Generator's rights to obtain access to, operate, maintain and/or repair the equipment and facilities that comprise the Generator System under all relevant Governmental Approvals of Lao Governmental Authorities to the extent such rights are necessary for EGAT to exercise its step-in rights in accordance with the requirements of this Section 10.3 and EGAT shall remain solely responsible for obtaining all relevant Governmental Approvals of Thai Governmental Authorities and compliance with the Law of Thailand applicable to its exercise of such step-in rights; and
- (c) provide EGAT access to all design manuals, construction drawings and other documentation as required by EGAT to assume responsibility for those aspects of operation, maintenance and/or repairs of the Generator System required to cure the relevant Generator Event of Default.

10.3.3 Throughout any period during which EGAT exercises its step-in rights pursuant to this Section 10.3, each Party shall remain fully responsible for complying with all terms and conditions of this Agreement and to perform all of its respective obligations hereunder as such responsibilities had been allocated between the Parties prior to the exercise by EGAT of its step-in rights pursuant to this Section 10.3.

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For the avoidance of doubt, notwithstanding the exercise of such step-in rights by EGAT:

- (a) the Generator shall remain solely responsible for managing the utilization of water by the Facility, all Declarations regarding the Availability of the Facility as required by this Agreement and, except to the extent provided in Section 10.3.4(b), for any liquidated damages incurred by the Generator pursuant to Section 9.6 during any period for which EGAT has exercised its step-in rights hereunder and assumed responsibility for any aspect of the operation, maintenance and/or repairs of equipment and facilities that comprise the Generator System pursuant to this Section 10.3; and
- (b) EGAT shall remain fully responsible for complying with all terms and conditions of this Agreement, including EGAT's responsibility and obligation to make Monthly Energy Payments to the Generator in accordance with the terms of this Agreement.

In no event shall EGAT's exercise of its step-in rights to assume responsibility for any aspect of the operation, maintenance and/or repair of equipment and facilities that comprise the Generator System be deemed to be a transfer of title or a transfer of any of the Generator's contractual obligations as owner thereof, but EGAT shall be deemed to be an independent contractor regarding the operation, maintenance and/or repair of equipment and facilities that comprise the Generator System for which EGAT has assumed responsibility in order to perform the remedial work required to cure the relevant Generator Event of Default. Notwithstanding the exercise by EGAT of its step-in rights hereunder, the Generator, as the owner of the Generator System, remains solely entitled to all rights and benefits of warranties of all equipment comprised in the Generator System (including any payments by the equipment suppliers in connection with such warranties).

10.3.4 During any period in which EGAT exercises its step-in rights hereunder, EGAT shall:

- (a) operate, maintain and/or repair the equipment and facilities that comprise that portion of the Generator System for which EGAT has assumed responsibility with due care and in accordance with applicable Law (including applicable environmental Law), the Concession Agreement, the Grid Code and Prudent Utility Practice; and with the standard of care normally associated with the provision by third party international operation, maintenance and/or repair contractors of services similar to services provided and work performed by EGAT on that

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portion of the Generator System for which EGAT has assumed operational responsibility;

- (b) be liable to the Generator for any damages to the Generator System or that are incurred by the Generator as the result of the failure of EGAT to comply with the requirements set forth in this Section 10.3.4(a), provided, however, that (i) EGAT shall have no more liability to the Generator than would a third party operation, maintenance and/or repair contractor with respect to the specific services provided and work performed by EGAT for that portion of the Generator System for which EGAT actually assumed responsibility for operation, maintenance and/or repair of the Generator System; and (ii) the Generator shall not be liable for any liquidated damages arising pursuant to Section 9.6 during those periods in which EGAT has exercised its step-in rights hereunder and assumed responsibility for the operation, maintenance and/or repair of part or all of the Generator System to the extent that such liquidated damages were solely the result of the failure of EGAT to satisfy the requirements set forth in Section 10.3.4(a);
- (c) have the right to return to the Generator at any reasonable time the responsibility for the operation, maintenance and/or repair of that portion of the Generator System for which EGAT had assumed responsibility by the exercise of step-in rights hereunder to the Generator, provided that EGAT shall return the Generator System to the Generator in a condition no worse than that existing immediately prior to the exercise of its step-in rights on the part of EGAT by giving fifteen (15) days prior written notice to the Generator, but with ordinary wear and tear and further deterioration of the Generator System due to the circumstances which existed at the time EGAT exercised its step-in rights excepted. Notwithstanding the foregoing, EGAT shall not be responsible for, or have any liability resulting from, any conditions of the Generator System that existed prior to EGAT's exercise of its step-in-rights; and
- (d) be entitled to receive reasonable remuneration for the specific services provided and work performed by EGAT on the equipment and facilities that comprise that portion of the Generator System for which EGAT actually assumed responsibility for operation, maintenance and/or repair services based upon the prevalent international rate of remuneration for comparable operation, maintenance and/or repair services from reputable international contractors that engage in the business of providing such services.

The Parties shall cooperate with each other and execute and deliver such documents as may be necessary or desirable to accomplish the

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foregoing. The remuneration referred to in paragraph (d) above which becomes payable during any such period shall be regarded as funds advanced by EGAT to the Generator. EGAT shall be entitled to obtain payment of such amounts in full and with interest calculated at the Default Rate from the date such payment is due. EGAT shall obtain such payment by deducting from the Monthly Energy Payments otherwise due from EGAT to the Generator in accordance with this Agreement during the step-in period and thereafter until such compensation has been paid to EGAT in full in accordance with Section 17.9 unless otherwise agreed with the Lenders as a condition to their consent to the exercise by EGAT of its step-in rights.

10.3.5 The failure by EGAT to meet its obligations set forth in Section 10.3.4(a) shall not cause the Generator to be in breach of this Agreement and shall not constitute a Generator Event of Default.

10.3.6 EGAT shall have the right to terminate this Agreement in accordance with Section 10.2.2 by giving thirty (30) days prior written notice to the Generator upon either:

- (a) when step-in rights have been exercised pursuant to Section 10.3.1(a), a determination by EGAT that the Generator Event of Default which resulted in the exercise by EGAT of its step-in rights hereunder cannot be remedied; or
- (b) when step-in rights have been exercised pursuant to Section 10.3.1(b), the expiration of that portion of the applicable cure period under Section 10.2.2 which remained outstanding at the time EGAT exercised such step-in rights, provided that the Generator shall be given the right to resume its efforts to cure the default within such remaining portion of the applicable cure period, such period to resume three (3) Business Days after EGAT returns to the Generator the responsibility for the operation, maintenance and/or repair of the equipment and facilities that comprise that portion of the Generator System for which EGAT had previously assumed operational, maintenance and/or repair responsibility hereunder.

10.3.7 Upon the curing of the Generator Event of Default that had led EGAT to exercise its step-in rights hereunder, EGAT shall return the operational, maintenance and/or repair responsibility for the equipment and facilities of the Generator System for which EGAT had assumed responsibility to the Generator with reasonable promptness.

#### 10.4 Other Rights to Terminate for Performance Defaults

Without prejudice to any other remedy which either Party may be entitled for breach of this Agreement, the Parties agree that Sections 1.5.4, 10.1.2, 10.2.2 and 11.11 state the only circumstances in which either Party may unilaterally

terminate this Agreement.

### 10.5 Limitation of Remedies

10.5.1 Nothing contained in this Agreement, including the benefit of any right or remedy pursuant to Section 9, shall prejudice or diminish the right of either Party to terminate this Agreement pursuant to this Section 10.

10.5.2 The Parties acknowledge that in the event of breach of this Agreement (including any breach constituting or resulting in an Event of Default and regardless of whether or not such Event of Default results in termination of this Agreement) by a Party:

- (a) where such breach or default gives rise to liability on the part of the defaulting Party for the payment of liquidated damages pursuant to Section 9, the right of the non-defaulting Party to claim such liquidated damages, absent termination of this Agreement due to such breach or default, shall constitute the non-defaulting Party's exclusive remedies in respect of such breach or default, but for the avoidance of doubt, the rights of the Parties to claim compensation arising from any other breaches of this Agreement or by the operation of laws shall not be prejudiced;
- (b) save as otherwise provided in Section 10.5.2(a), the defaulting Party shall be liable to the other only in respect of direct damages, costs, losses and expenses caused by or arising from such breach. Neither Party shall be liable for damages to the other for any indirect, incidental, consequential loss or punitive damage (including without limitation for loss of use of property, contract, production, revenue or goodwill, cost of business interruption or increased costs of working or other loss of profit, benefit (whether economic or otherwise), utility or opportunity howsoever) as a result of any breach or non performance of the terms of this Agreement or arising from any negligence or misconduct on the part of the other Party, its officers, agents, employees, contractors and sub-contractors.

### 10.6 Termination subject to Dispute Resolution

If EGAT shall dispute the existence or continuance of an EGAT Event of Default or the Generator shall dispute the existence or continuance of a Generator Event of Default or either Party shall dispute any other fact or circumstance concerning actual or purported termination of this Agreement, the dispute shall be resolved in accordance with Section 13 and this Agreement shall not be terminated except pursuant to and in accordance with the resolution of such dispute in accordance with Section 13.

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**11. FORCE MAJEURE****11.1 Meaning of Force Majeure**

- (a) Except for those events, conditions and circumstances set forth in Section 11.1(e), “**Force Majeure**” for the purposes of this Agreement shall be an event, condition or circumstance or combination of events, conditions and circumstances (together with the effects thereof) beyond the reasonable control and arising without the fault or negligence of the Party claiming Force Majeure (the “**Affected Party**”) which, despite all reasonable efforts of the Affected Party to prevent it or mitigate its effects, causes a delay or disruption of, or any other adverse effects on, the performance by the Affected Party of any of its obligations under this Agreement. Subject to satisfaction of the foregoing requirements, Force Majeure shall include the following:
- (i) acts of war (whether declared or undeclared), invasion, armed conflict or other hostile act of a foreign nation not being Lao Political Force Majeure or Thai Political Force Majeure;
  - (ii) revolution, riot, mutiny, rebellion, insurrection, military or usurped power, state of siege, civil commotion or the declaration or maintenance of martial law or state of siege;
  - (iii) acts of terrorism or sabotage;
  - (iv) strikes, work to rule, go-slows or lockouts or other labor disturbances or industrial action which are widespread or nationwide (but excluding any strikes solely within the workforce or employ of the Affected Party or its respective Affiliates);
  - (v) nuclear or radioactive explosion or contamination;
  - (vi) fire, explosion, lightning, earthquake, landslide, storms, severe weather conditions or other natural disasters or acts of God (but excluding reasonably foreseeable occurrences of the foregoing events which in accordance with Prudent Utility Practice should have been taken into account in the respective design and intended operation of the Generator System and the EGAT Transmission Facilities and any modifications thereto during the Term of this Agreement so as to eliminate or mitigate the effects of such reasonably foreseeable occurrences on the operation and performance of the Generator System and the EGAT Transmission Facilities);
  - (vii) epidemic or plague;
  - (viii) blockade, embargo, any closing of borders, roads, rail links, airports, harbors, docks or other assistance to or adjuncts of the

transport, shipping or navigation of, to or within any place:

- (aa) not resulting from any action on the part of any Lao Governmental Authority or any Thai Governmental Authority; or
  - (bb) resulting from any action on the part of any Lao Governmental Authority or Thai Governmental Authority attributable to or arising from any event, condition or circumstance referred to in paragraphs (ii) to (vii) inclusive of this Section 11.1(a);
  - (ix) Thai Political Force Majeure; and
  - (x) Lao Political Force Majeure.
- (b) Subject to satisfaction of the requirements of Section 11.1(a) and excepting those events, conditions and circumstances set forth in Section 11.1(e), **“Lao Political Force Majeure”** shall mean and be limited to the following events, conditions and circumstances or combination of events, conditions and circumstances (together with the effects thereof):
- (i) when initiated by the Government of the Lao PDR, acts of war (whether declared or undeclared), invasion, armed conflict and other hostile acts of the Lao PDR or other nations against Thailand or that directly affect activities within Thailand or the Lao PDR;
  - (ii) Lao Change-in-Law;
  - (iii) any act by or any omission of any Lao Governmental Authority (excepting lawful actions taken by Lao Governmental Authorities due to acts by or omissions of either or both of the Parties or their contractors, servants or agents) which is directly applicable to either or both of the Parties and which materially and adversely affects the performance by either or both of the Parties of any of their respective obligations under this Agreement, but excepting any events, conditions and circumstances (or any combination thereof) referred to in Section 11.1(a)(viii)(bb); and
  - (iv) failure by either Party to obtain or renew any required Lao Governmental Approval relating to the performance of any of its obligations under this Agreement unless such failure is attributable to an act by or omission of either or both of the Parties or their contractors, servants or agents. For the avoidance of doubt, failures to obtain Lao Governmental Approvals that are attributable to acts or omissions of the Parties and that therefore do not constitute Lao Political Force

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Majeure include failures of each Party to obtain required Lao Governmental Approvals as the result of such Party failing to satisfy the legal requirements for obtaining or renewing such Lao Governmental Approvals (notwithstanding the application and persuasion made by the relevant Party to the relevant Lao Governmental Authorities that it satisfies the legal requirements therefor) and, provided, further, that any and all acts by or omissions of relevant Lao Governmental Authorities legally taken as the result of such failures on the part of a Party to have obtained such Lao Governmental Approvals shall not constitute Lao Political Force Majeure;

provided, however, that:

- (1) the events, conditions or circumstances described in Sections 11.1(b)(ii), (iii) and (iv) (and any combination thereof) shall only constitute Lao Political Force Majeure when the action or omission of Lao Governmental Authorities is the controlling or contributing force which determines or causes the occurrence of such events, conditions or circumstances or the continuation of the effects thereof;
- (2) notwithstanding any provisions in any Project Agreement to the contrary, the Generator shall be solely responsible to complete the construction of all Generator Subsystems in accordance with this Agreement and, in the event that any third party fails to satisfy such third party's obligation under any Project Agreement to construct any part of any Generator Subsystem, the Generator shall not be entitled to claim either a Lao Political Force Majeure or a Force Majeure under this Agreement in respect of such third party's failure (save to the extent permitted by Section 11.1 (d)) and, in the event that the Generator is required to pay Delay Amounts to EGAT in accordance with Section 9.5, the Delay Amounts that are either directly or indirectly associated with such third party's failure shall be classified as liquidated damages and not Force Majeure Offset Amounts;
- (3) notwithstanding any provisions in the Concession Agreement and/or this Agreement to the contrary, the Generator shall be solely responsible for ensuring the consistency between the terms and conditions of the Concession Agreement and those of this Agreement (including ensuring the consistency between the term of the Concession Agreement and the Term of this Agreement) and, in the event that there is any event, condition or circumstance, including any effect or failure or consequence in association with such event, condition or circumstance, occurring pursuant to the inconsistency between the terms and conditions of the Concession Agreement and those of this Agreement (including ensuring the consistency between the

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term of the Concession Agreement and the Term of this Agreement), the Generator shall not be entitled to claim either a Lao Political Force Majeure or a Force Majeure under this Agreement in respect of such event, condition or circumstance, including any effect or failure or consequence in association with such event, condition or circumstance; and

- (4) any misrepresentation made by the Government of the Lao PDR in the GOL Undertaking, including its Schedules and Annexes, and/or any failure of the Government of the Lao PDR to satisfy any of its undertakings, agreements or confirmations in the GOL Undertaking, including its Schedules and Annexes, or to satisfy any of its obligations under any of the Concession Agreement, the Lease Agreement and all other legal instruments related thereto shall constitute a Lao Political Force Majeure.
- (c) Subject to satisfaction of the requirements of Section 11.1(a) and excepting those events, conditions and circumstances set forth in Section 11.1(e), “**Thai Political Force Majeure**” shall mean and be limited to the following events, conditions or circumstances or combination of events, conditions and circumstances (together with the effects thereof):
- (i) when initiated by the Government of Thailand, acts of war (whether declared or undeclared), invasion, armed conflict or other hostile acts of Thailand or other nations against the Lao PDR or that directly affect activities within the Lao PDR or Thailand;
  - (ii) Thai Change-in-Law;
  - (iii) any act by or any omission of any Thai Governmental Authority (excepting lawful actions taken by such Thai Governmental Authorities due to acts by or omissions of either or both of the Parties or their contractors, servants or agents) which is directly applicable to either or both of the Parties and which materially and adversely affects the performance by either or both of the Parties of any of their respective obligations under this Agreement, but excepting any events, conditions and circumstances (or any combination thereof) referred to in Section 11.1(a)(viii)(bb); and
  - (iv) failure by either Party to obtain or renew any required Thai Governmental Approval relating to the performance of any of its obligations under this Agreement unless such failure is attributable to an act by or omission of either or both of the Parties or their contractors, servants or agents. For the avoidance of doubt, failures to obtain Thai Governmental Approvals that are attributable to acts or omissions of the

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Parties and that therefore do not constitute Thai Political Force Majeure include failures of each Party to obtain required Thai Governmental Approvals as the result of such Party failing to satisfy the legal requirements for obtaining or renewing such Thai Governmental Approvals (notwithstanding the application and persuasion made by the relevant Party to the relevant Thai Governmental Authorities that it satisfies the legal requirements therefor) and, provided, further, that any and all acts by or omissions of relevant Thai Governmental Authorities legally taken as the result of the such failures on the part of a Party to have obtained such Thai Governmental Approvals shall not constitute Thai Political Force Majeure;

provided, however, that events, conditions or circumstances described in Sections 11.1(c)(ii), 11.1(c)(iii) and 11.1(c)(iv) (and any combination thereof) shall only constitute Thai Political Force Majeure when the act or omission of Thai Governmental Authorities is the controlling or contributing force which determines or causes the occurrence of such events, conditions or circumstances or the continuation of the effects thereof.

- (d) A Party may only claim Force Majeure based upon the performance of one or more of its contractors to the extent that the performance of any such contractor has itself been adversely affected by an event, condition or circumstance (or any combination thereof) which is beyond the reasonable control and arising without the fault or negligence of such contractor which, despite all reasonable efforts of such contractor to prevent it or mitigate its effects, causes a delay or disruption of, or any other adverse effects on, the performance by such contractor of any of its contractual obligations to the Affected Party and then, under such circumstances, the Affected Party may only obtain Force Majeure relief with respect to its obligations hereunder due to performance of each such contractor affected by such qualifying event, condition or circumstance to the extent that such affected performance of such contractor has, notwithstanding all reasonable efforts of the Affected Party to prevent or mitigate the consequences of the adversely affected performance by such contractor, adversely affected the performance of the Affected Party of its own obligations under this Agreement.
- (e) Notwithstanding any other provision of this Agreement to the contrary, the Parties acknowledge that, subject to the exception set forth in the last paragraph of this Section 11.1(e), the following events, conditions and circumstances or combinations of such events, conditions and circumstances (together with the effects thereof) shall not constitute or be capable of causing Force Majeure or Political Force Majeure:
- (i) late delivery, breakdown or failure of any plant, machinery, equipment, materials, spare parts or consumables for the

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Generator System or the EGAT System unless such is itself the direct result of Force Majeure;

- (ii) failure, inability or difficulty in making any payment or lack of funding sufficient to meet any payment obligation accrued by either Party pursuant to this Agreement;
- (iii) other than a prohibition against the sale by the Generator of electrical energy from the Facility to EGAT hereunder, any act by or any omission of any Thai Governmental Authority (including Change-in-Law, the promulgation of rules and regulations, the issuance of administrative and policy directives, the development of contracts and other commercial arrangements, and the imposition of other technical, commercial and legal requirements) associated directly or indirectly with:
  - (1) the establishment, organization and operation or any other aspects of the power pool; or
  - (2) the reorganization, restructuring, corporatization, privatization, reincorporation or abolishment of EGAT or any other governmental organizations associated with the electricity generation, transmission, supply and distribution industry in Thailand;
- (iv) any act by or any omission of any Thai Governmental Authority (including Change-in-Law, the promulgation of rules and regulations, and the issuance of administrative and policy directives) related to the manner, mechanism or process utilized for determining the exchange rates for the conversion between Thai Baht and foreign currencies;
- (v) except for those acts and omissions by Lao Governmental Authorities and Thai Governmental Authorities pursuant to Change-in-Law, any events, conditions or circumstances or any combination thereof, together with the effects thereof (whether or not such might otherwise constitute Lao Political Force Majeure or Thai Political Force Majeure), caused or taken by or resulting from any lawful act by or any lawful omission of a Lao Governmental Authority or a Thai Governmental Authority, respectively, when such acts or omissions are either routine in nature or part of the normal governmental process and are not specifically directed at or otherwise specifically applicable to either of the Parties; and
- (vi) with respect to the obligations of the Generator hereunder to satisfy the Contracted Supply Conditions and to operate, maintain and provide electrical energy from each Commissioned Unit to the EGAT System on and after the

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Commercial Operation Date, the lack of rainfall, drought, flood, any diversion away or release of water from the water sources necessary for the operation of the Generator System required by any Lao Governmental Authority, and any limitation of the capability of the Facility to provide electrical energy associated with the maximum amount of water that may be released from the Facility;

provided; however, that the events, conditions and circumstances described in the foregoing subsections (i), (ii) and (v) of this Section 11.1(e) (and any combinations thereof) are exempt from the foregoing limitation and may constitute Force Majeure or Political Force Majeure, as the case may be, but only to the extent that such events, conditions or circumstances are themselves caused by or prolonged as the result of a separate and independent event, condition or circumstance that otherwise constitutes Force Majeure or Political Force Majeure, as the case may be. Under such circumstances, the events, conditions and circumstances described in subsections (i), (ii) and (v) of this Section 11.1(e) shall constitute the same type of Force Majeure or Political Force Majeure as that of the separate and independent event, condition or circumstance that caused or prolonged the foregoing events, conditions or circumstances.

## 11.2 Notification

- (a) The Affected Party shall give written notice to the other Party of any Force Majeure as soon as reasonably practicable, but not later than two (2) Business Days after the date on which such Affected Party knew or should reasonably have known of the commencement of such Force Majeure and is not otherwise incapable of communicating such notification to the other Party by reason of Force Majeure. If such written notice is given more than two (2) Business Days after that date, the period of relief afforded to the Affected Party under this Section 11 during which the Affected Party shall be excused from its failure to perform its affected obligations under this Agreement shall commence from the date which is two (2) Business Days before the date of such written notice. Such written notice shall include a description of the relevant event, condition or circumstance (or any combinations thereof), the effects thereof on the Affected Party's ability to perform its obligations under this Agreement, the particular obligations affected, the best possible estimate which the Affected Party can prepare under the circumstances of the expected duration and severity of the effect of such Force Majeure (such estimate to be made and given under the assumption that the Affected Party shall take any and all actions as are necessary for the Affected Party to satisfy the requirements of Section 11.4) and the remedial measures (if any) which the Affected Party intends to take to remedy and mitigate the effects of such Force Majeure.

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- (b) The Affected Party shall keep the other Party reasonably apprised of the status of Force Majeure and the Affected Party's efforts to mitigate the effects thereof (in accordance with the requirements of Section 11.4) and to resume performance of its affected obligations hereunder from which it has obtained relief by virtue of such Force Majeure.
- (c) The Affected Party shall give written notice to the other Party of (i) the cessation of the relevant event, condition or circumstance of Force Majeure, (ii) the cessation of the effects thereof on the performance by the Affected Party of its affected obligations under this Agreement, and (iii) the resumption of the Affected Party's performance of such obligations. All such written notices shall be given by the Affected Party as soon as practicable after becoming aware of each of (i), (ii) and (iii) above but, in each case, within two (2) Business Days after it became so aware or should reasonably have become so aware thereof.

### 11.3 Provision of Information

The Affected Party shall provide and make available to the other Party reasonable facilities for obtaining further information in relation to Force Majeure including, subject to the other Party complying with such reasonable and procedural requirements as may be stipulated from time to time by the Affected Party, facilities for inspection of all sites and premises under the control of the Affected Party.

### 11.4 Duty to Mitigate

The Affected Party shall use all reasonable efforts, at its own cost, to (i) mitigate the duration and severity of the relevant Force Majeure; (ii) remedy its inability to perform its affected obligations hereunder; and (iii) resume full performance of its affected obligations under this Agreement as soon as practicable.

### 11.5 Effect of Force Majeure

#### 11.5.1 General

- (a) Subject to the Affected Party's satisfaction of the requirements set forth in Sections 11.3 and 11.4 and the limitations set forth in Section 11.6, if the Affected Party is wholly or partially unable to perform one or more of its obligations under this Agreement due solely to Force Majeure then, upon the Affected Party giving written notice to the other Party which satisfies the requirements therefor set forth in Section 11.2, the relevant affected obligations of the Affected Party under this Agreement shall be suspended and the Affected Party shall not be in breach thereof to the extent that and for as long as such affected obligations are unable to be performed by the Affected Party solely as a result of such Force Majeure notwithstanding

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the Affected Party's efforts to mitigate the duration and severity of such Force Majeure and to resume performance of such affected obligations, all in accordance with the requirements of Section 11.4. For the avoidance of doubt, the Affected Party shall remain liable to perform its unaffected obligations of this Agreement.

- (b) The circumstances in which a Party is liable for paying Force Majeure Offset Amounts in respect of Force Majeure occurring after the EGAT Construction Obligation Commencement Date are set out as follows:
- (i) subject to Section 11.7.4(c), if EGAT's obligations have been affected by an EGAT Force Majeure, EGAT shall pay Force Majeure Offset Amounts to the Generator in accordance with Section 11.7;
  - (ii) subject to Section 11.8.4(c), if the Generator's obligations have been affected by a Generator Force Majeure, the Generator shall pay Force Majeure Offset Amounts to EGAT in accordance with Section 11.8;
  - (iii) if either Party's obligations have been affected by Thai Political Force Majeure, EGAT shall pay Force Majeure Offset Amounts to the Generator in accordance with Section 11.7; and
  - (iv) if either Party's obligations have been affected by Lao Political Force Majeure, the Generator shall pay Force Majeure Offset Amounts to EGAT in accordance with Section 11.8.
- (c) For the avoidance of doubt,
- (i) the Party that is liable to pay Force Majeure Offset Amounts for the duration of a Force Majeure pursuant to Section 11.5.1(b) shall not be liable to pay liquidated damages in respect of such same duration; and
  - (ii) the Generator shall not be liable to pay Force Majeure Offset Amounts for its failure to achieve the Financial Close Date by the later to occur of the Scheduled Financial Close Date and the ESFCD due to the occurrence of Force Majeure.
- (d) With respect to any failure to perform an affected obligation for which the Affected Party is required to pay Force Majeure Offset Amounts to the non-affected Party, the Affected Party shall not be liable for the payment of the liquidated damages for which the Affected Party would otherwise be liable

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pursuant to this Agreement absent such failure being attributable to the occurrence of Force Majeure.

- (e) The Parties shall maintain records in respect of all periods that both Parties are respectively affected by Force Majeure, including the relevant starting dates, ending dates, respective causes and efforts to mitigate, for the purposes of documenting the occurrence and effects of Force Majeure and the calculation of the Force Majeure Offset Amounts payable in accordance with the requirements of Sections 11.7 and 11.8, as appropriate.

#### 11.5.2 Force Majeure before Commercial Operation Date

- (a) In the event that the Financial Close Date occurs before the Scheduled Financial Close Date and a Force Majeure occurs during the period between the Financial Close Date and the EGAT Construction Obligation Commencement Date:
  - (i) neither Party shall be liable to pay Force Majeure Offset Amounts to the other Party;
  - (ii) none of the Milestone Dates specified in Section 8.2 and the periods contractually provided for the performance of the obligations by either Party under this Agreement shall be extended pursuant to the occurrence of that Force Majeure, provided that, in the event that such Force Majeure continues beyond the EGAT Construction Obligation Commencement Date, the Milestone Dates specified in Section 8.2 and the periods contractually provided for the performance of the obligations by either Party under this Agreement shall be extended day-for-day for each day that such Force Majeure continues after the EGAT Construction Obligation Commencement Date; and
  - (iii) the cause and details of that Force Majeure shall not be recorded and the effect of that Force Majeure shall not be taken into account for the purpose of determining the Delay Amounts in Section 9.5.
- (b) Without prejudice to either Party's right to terminate this Agreement in accordance with Sections 11.11(a), 11.11(b), 11.11(c) and 11.11(e) and the determination of liquidated damages and/or Force Majeure Offset Amounts associated with delay in achieving the Milestone Dates in accordance with Section 9.5 of this Agreement, in the event of an occurrence of Force Majeure during the period between the EGAT Construction Obligation Commencement Date and the Commercial Operation Date which adversely affects the capability of a Party to perform its respective obligations

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hereunder, the periods contractually provided by this Agreement for the performance of the affected obligations by the Affected Party and for the performance by the other Party of its obligations under this Agreement relating or corresponding to the affected obligations of the Affected Party (including, without limitation, the obligations to achieve the Milestone Dates by the dates specified therefor in Section 8) shall all be extended day-for-day for each day that Force Majeure prevented the Affected Party from performing such affected obligations in accordance with Section 8.3.1.

#### 11.5.3 Force Majeure on or after Commercial Operation Date

In the event of an occurrence of Force Majeure on or after the Commercial Operation Date which affects either Party's capability to perform its obligation in accordance with the terms and conditions of this Agreement, the Term and the Scheduled Termination Date shall be extended in accordance with Sections 8.1.2(b)(i) and 8.1.2(f), respectively.

### 11.6 Limitation

11.6.1 The Affected Party shall not be entitled to suspend performance and obtain any other relief under this Agreement due to the occurrence of Force Majeure for any greater scope or longer duration than is required solely by the occurrence of such Force Majeure; and the period of relief afforded to the Affected Party due to the occurrence of such Force Majeure and the suspension thereby of the affected obligations shall be limited to that period of time which should have been required for the Affected Party to remedy the occurrence and mitigate the effects of such Force Majeure (and to resume performance of its affected obligations) had the Affected Party taken all of the actions necessary for it to have satisfied its duty to remedy and mitigate the effects of such Force Majeure in accordance with the requirements of Section 11.4.

11.6.2 Neither Party shall be relieved of its obligations under this Agreement and any obligations of a Party shall not be suspended by virtue of the occurrence of events, conditions or circumstances (or combinations thereof) which might or would otherwise constitute Force Majeure solely because there may be increased costs or other adverse economic consequences that may or will be incurred by such Party as either a direct effect of such events, conditions or circumstances (or combinations thereof) or as a result of the performance by such Party of its obligations under this Agreement (including performance by the Affected Party of the affected obligations and such performance as is required of the Affected Party in order for the Affected Party to satisfy its duty to remedy and mitigate the effects of Force Majeure in accordance with the requirements of Section 11.4).

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11.6.3 In the event that an event, condition or circumstance does not constitute Force Majeure (either due to failure to satisfy the requirements therefor as set forth in Section 11.1(a) or by reason of Section 11.1(e)), but which adversely affects the performance of a Party of any of its obligations under this Agreement, that Party shall not be relieved of its thus affected obligations by virtue of any claim of Force Majeure (including Thai Political Force Majeure and Lao Political Force Majeure) and any failure by such Party to perform such affected obligations shall constitute a breach of this Agreement and the non-defaulting Party may exercise any and all remedies hereunder to which it is entitled for breaches of this Agreement, including requiring the payment of liquidated damages and termination of this Agreement in accordance with Section 10 in the event that one or more of such performance failures constitute either an EGAT Event of Default or a Generator Event of Default; provided, however, that:

- (a) failure of one Party to perform any of its obligations hereunder due to an act by or an omission of a Governmental Authority which is applicable to such Party, but which has been lawfully taken by such Governmental Authority due to or as a result of an act by or an omission of the other Party, shall neither constitute a breach of this Agreement by the non performing Party nor require its payment of liquidated damages therefor; and
- (b) to the extent that an act by or an omission of one Party results in a lawful act by or a lawful omission of a Governmental Authority applicable to the other Party, then that act by or that omission of such Party shall itself constitute an Event of Default if the resulting act by or omission of that Governmental Authority adversely affects the performance by the other Party of any of its obligations under this Agreement.

## 11.7 EGAT Force Majeure Payments

11.7.1 If EGAT is wholly or partially unable to perform one or more of its obligations under this Agreement by reason of a Force Majeure, then the relevant obligations of EGAT under this Agreement shall be suspended in accordance with Section 11.5.1(a), provided that EGAT shall remain liable to perform its unaffected obligations, including, without limitation, the payment of any amounts due (i) prior to the occurrence of the relevant Force Majeure; (ii) in accordance with the requirements of Sections 11.7.3, 11.7.4 and 11.7.5; and (iii) in respect of its unaffected obligations, whether by way of price, damages, compensation or otherwise.

11.7.2 Except for the payments required to be made by EGAT pursuant to Section 11.7, and notwithstanding any other provision of this

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Agreement to the contrary, EGAT shall have no obligation or liability to pay any amount by way of price, damages, compensation or otherwise to the Generator in respect of the obligations of EGAT that are suspended by a Force Majeure.

**11.7.3 Force Majeure Offset Amounts payable by EGAT in connection with the Milestone Dates**

If:

- (i) either EGAT or the Generator delays in meeting its Milestone Dates by reason of a Thai Political Force Majeure; or
- (ii) EGAT delays in meeting its Milestone Dates by reason of an EGAT Force Majeure;

then EGAT shall pay Force Majeure Offset Amounts to the Generator on a monthly basis in accordance with Sections 9.5.3, 9.5.4, 9.5.5 and 9.5.6.

The amount of all Force Majeure Offset Amounts paid by EGAT to the Generator in respect of such delays in accordance with this Section 11.7.3 will be recorded in the EGAT Pre COD FMOA Account. No interest shall accrue on the EGAT Pre COD FMOA Account and the amounts accrued on the EGAT Pre COD FMOA Account shall not be adjusted or escalated by the effect of inflation.

**11.7.4 Force Majeure Offset Amounts payable by EGAT from the Commercial Operation Date**

At any time from the Commercial Operation Date, if either:

- (i) an EGAT Affected Force Majeure Outage caused by either an EGAT Force Majeure or a Thai Political Force Majeure occurs; or
- (ii) a Generator Affected Force Majeure Outage caused by a Thai Political Force Majeure occurs,

then EGAT shall make monthly payments of Force Majeure Offset Amounts to the Generator calculated on the basis of the Monthly Force Majeure Dispatch Shortfall Energy associated with such EGAT Affected Force Majeure Outage or, as the case may be, the Monthly Force Majeure Unavailability associated with such Generator Affected Force Majeure Outage, as follows:

- (a) For the case of a Thai Political Force Majeure

Where such EGAT Affected Force Majeure Outage or Generator Force Majeure Outage is caused by a Thai Political

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Force Majeure occurring during Relevant Period n, EGAT shall pay to Generator Force Majeure Offset Amounts, on a monthly basis, being an amount equal to the Committed Energy Component comprised in such Monthly Force Majeure Dispatch Shortfall Energy or Monthly Force Majeure Unavailability times 70% of the tariff applicable to such Committed Energy Component.

(b) For the case of an EGAT Force Majeure

Where such EGAT Affected Force Majeure Outage is caused by an EGAT Force Majeure, the period during which the relevant obligations of EGAT are suspended shall be defined as the “**EGAT FM Suspension Period**”. EGAT shall pay to the Generator monthly Force Majeure Offset Amounts as follows:

- (1) in the event that such EGAT Force Majeure occurs during the Relevant Period 1, an amount equal to the Committed Energy Component comprised in such Monthly Force Majeure Dispatch Shortfall Energy times 70% of the tariff applicable to such Committed Energy Component;
- (2) in the event that such EGAT Force Majeure occurs during the Relevant Period n (where n is 2, 3, 4, 5 or 6) and the Post 29-Year FM Period, as applicable, an amount equal to the Committed Energy Component comprised in such Monthly Force Majeure Dispatch Shortfall Energy times 70% of the tariff applicable to such Committed Energy Component, provided that EGAT shall not be required to pay Force Majeure Offset Amounts in respect of the Monthly Force Majeure Dispatch Shortfall Energy that is associated with the corresponding “**EGAT Excused FMOA Period**” (being defined as the initial portion of each such EGAT FM Suspension Period up to a maximum duration of fourteen (14) days per each occurrence of EGAT Force Majeure irrespective of the duration of each such occurrence) as determined in accordance with Paragraph 2(d) of Schedule 10, unless and until the aggregate amount of all EGAT Excused FMOA Periods associated with each respective prior EGAT Force Majeure that has occurred during the Relevant Period n (where n is 2, 3, 4, 5 or 6), as applicable, is equal to or more than ninety (90) days.

For the purpose of applying Section 11.7.4(b)(2), the duration of each EGAT Excused FMOA Period that occurs shall be accumulated into the corresponding Relevant Period n EGAT

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Excused FMOA Period Account, where n is either 2, 3, 4, 5 or 6, as applicable.

- (c) For the avoidance of doubt, for the purpose of this Section 11.7.4, other than a Force Majeure affecting the operation and maintenance of the Interconnection Facilities, in the event a Non-Political Force Majeure simultaneously affects both Parties after the Commercial Operation Date, the periods for which such Non-Political Force Majeure affects both Parties shall be set off against each other and EGAT shall only be liable to pay to Generator Force Majeure Offset Amounts to the extent that the period for which EGAT is affected by such Non-Political Force Majeure exceeds the period for which the Generator is affected by such Non-Political Force Majeure.
- (d) The amount of all Force Majeure Offset Amounts paid by EGAT to the Generator during the respective Relevant Period n in accordance with this Section 11.7.4 will be recorded in the respective EGAT Relevant Period n FMOA Account (where n is 1, 2, 3, 4, 5 or 6). No interest shall accrue on any of these EGAT Relevant Period n FMOA Accounts and the amounts accrued on any of these accounts shall not be adjusted or escalated by the effect of inflation.

11.7.5 Other than as provided pursuant to Section 17.12.2(b), upon termination of this Agreement due to either the failure of EGAT to acquire the EGAT Access Rights as the result of the EGAT Force Majeure referred to in Section 2.1.7(c) pursuant to Section 11.11(b) or the occurrence of a Thai Political Force Majeure pursuant to Sections 11.11(c) or 11.11(d)(i), and without affecting the liability of either Party to pay any liquidated damages and other amounts (including all Unpaid EGAT FMOA pursuant to a Thai Political Force Majeure and all Unpaid Generator FMOA pursuant to a Lao Political Force Majeure but excluding all other Force Majeure Offset Amounts) which may have accrued under this Agreement up to the Term Termination Date, EGAT shall pay to the Generator the Termination Payment due to the Generator and EGAT shall simultaneously thereupon acquire the ownership of the Generator Assets from the Generator through the EGAT Designated Assignee, all in accordance with and subject to the terms of Section 17.12 and Schedule 9.

## 11.8 Generator Force Majeure Payments

11.8.1 If the Generator is wholly or partially unable to perform one or more of its obligations under this Agreement by reason of a Force Majeure, then the relevant obligations of the Generator under this Agreement shall be suspended in accordance with Section 11.5.1(a), provided that the Generator shall remain liable to perform its unaffected obligations, including, without limitation, the payment of any amounts due (i) prior

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to the occurrence of the relevant Force Majeure; (ii) in accordance with the requirements of Sections 11.8.3, 11.8.4 and 11.8.5; and (iii) in respect of its unaffected obligations, whether by way of price, damages, compensation or otherwise.

11.8.2 Except for the payments required to be made by the Generator pursuant to Section 11.8, and notwithstanding any other provision of this Agreement to the contrary, the Generator shall have no obligation or liability to pay any amount by way of price, damages, compensation or otherwise to EGAT in respect of the obligations of the Generator that are suspended by a Force Majeure.

11.8.3 Force Majeure Offset Amounts payable by the Generator in connection with the Milestone Dates

If:

- (i) either EGAT or the Generator delays in meeting its Milestone Dates by reason of a Lao Political Force Majeure; or
- (ii) the Generator delays in meeting its Milestone Dates by reason of a Generator Force Majeure;

then the Generator shall pay Force Majeure Offset Amounts to EGAT on a monthly basis in accordance with Sections 9.5.3, 9.5.4 and 9.5.5.

The amount of all Force Majeure Offset Amounts paid by the Generator to EGAT in respect of such delays in accordance with this Section 11.8.3 will be recorded in the Generator Pre COD FMOA Account. No interest shall accrue on the Generator Pre COD FMOA Account and the amounts accrued on the Generator Pre COD FMOA Account shall not be adjusted or escalated by the effect of inflation.

11.8.4 Force Majeure Offset Amounts payable by the Generator from the Commercial Operation Date

At any time from the Commercial Operation Date, if either:

- (i) a Generator Affected Force Majeure Outage caused by either a Lao Political Force Majeure or a Generator Force Majeure occurs; or
- (ii) an EGAT Affected Force Majeure Outage caused by a Lao Political Force Majeure occurs,

then the Generator shall make monthly payments of Force Majeure Offset Amounts to EGAT calculated on the basis of the Monthly Force Majeure Unavailability associated with such Generator Affected Force Majeure Outage or, as the case may be, the Monthly Force Majeure Dispatch Shortfall Energy associated with such EGAT Affected Force

Majeure Outage, as follows:

(a) For the case of a Lao Political Force Majeure

Where such Generator Affected Force Majeure Outage or EGAT Affected Force Majeure Outage is caused by a Lao Political Force Majeure occurring during Relevant Period n, the Generator shall pay to EGAT Force Majeure Offset Amounts, on a monthly basis, being an amount equal to the Committed Energy Component comprised in such Monthly Force Majeure Unavailability or Monthly Force Majeure Dispatch Shortfall Energy times the sum of:

- (I) 23.7% of the tariff applicable to such Committed Energy Component; and
- (II) 70% of 0.94 US Cent/kWh.

(b) For the case of a Generator Force Majeure

Where such Generator Affected Force Majeure Outage is caused by a Generator Force Majeure, the period during which the relevant obligations of the Generator are suspended shall be defined as the “**Generator FM Suspension Period**”. The Generator shall pay to EGAT Force Majeure Offset Amounts on a monthly basis as follows:

- (1) in the event that such Generator Force Majeure occurs during the Relevant Period 1, an amount equal to the Committed Energy Component comprised in such Monthly Force Majeure Unavailability times the sum of:
  - (I) 23.7% of the tariff applicable to such Committed Energy Component; and
  - (II) 70% of 0.94 US Cent/kWh;
- (2) in the event that such Generator Force Majeure occurs during the Relevant Period n (where n is 2, 3, 4, 5 or 6), as applicable, an amount equal to the Committed Energy Component comprised in such Monthly Force Majeure Unavailability times the sum of:
  - (I) 23.7% of the tariff applicable to such Committed Energy Component; and
  - (II) 70% of 0.94 US Cent/kWh,

provided that the Generator shall not be required to pay Force

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Majeure Offset Amounts in respect of the Monthly Force Majeure Unavailability that is associated with the corresponding “**Generator Excused FMOA Period**” (being defined as the initial portion of each such Generator FM Suspension Period up to a maximum duration of fourteen (14) days per each occurrence of Generator Force Majeure irrespective of the duration of each such occurrence) as determined in accordance with Paragraph 1(b) of Schedule 10, unless and until the aggregate amount of all Generator Excused FMOA Periods associated with each respective prior Generator Force Majeure that has occurred during the Relevant Period n (where n is 2, 3, 4, 5 or 6), as applicable, is equal to or more than ninety (90) days.

For the purpose of applying Section 11.8.4(b)(2), the duration of each Generator Excused FMOA Period that occurs shall be accumulated into the corresponding Relevant Period n Generator Excused FMOA Period Account, where n is either 2, 3, 4, 5 or 6, as applicable.

- (c) For the avoidance of doubt, for the purpose of this Section 11.8.4, other than a Force Majeure affecting the operation and maintenance of the Interconnection Facilities, in the event a Non-Political Force Majeure simultaneously affects both Parties after the Commercial Operation Date, the periods for which such Non-Political Force Majeure affects both Parties shall be set off against each other and the Generator shall only be liable to pay to EGAT Force Majeure Offset Amounts for the period for which the Generator is affected by such Non-Political Force Majeure exceeds the period for which EGAT is affected by such Non-Political Force Majeure.
- (d) The amount of all Force Majeure Offset Amounts made by the Generator to EGAT during the respective Relevant Period n in accordance with this Section 11.8.4 will be recorded in the respective Generator Relevant Period n FMOA Account (where n is 1, 2, 3, 4, 5 or 6). No interest shall accrue on any of these Generator Relevant Period n FMOA Accounts and the amounts accrued on any of these accounts shall not be adjusted or escalated by the effect of inflation.

11.8.5 Upon termination of this Agreement due to the occurrence of a Lao Political Force Majeure pursuant to Sections 11.11(c) or 11.11(d)(i), and without affecting the liability of either Party to pay any liquidated damages and other amounts (including all Unpaid EGAT FMOA pursuant to a Thai Political Force Majeure and all Unpaid Generator FMOA pursuant to a Lao Political Force Majeure but excluding all other Force Majeure Offset Amounts) which may have accrued under this Agreement up to the Term Termination Date, EGAT shall notify

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the Generator within ninety (90) days after the Term Termination Date of EGAT's election to either: (a) require the Generator to make the Termination Payment without EGAT acquiring the ownership of the Generator Assets from the Generator; or (b) acquire the ownership of the Generator Assets from the Generator through the EGAT Designated Assignee simultaneously upon the payment by EGAT to the Generator of the Termination Payment in which event, depending upon the election which EGAT makes, the relevant Termination Payment shall be made and that acquisition, if so elected by EGAT, shall occur all in accordance with and subject to the terms of Section 17.12 and Schedule 9.

## 11.9 Application of Force Majeure Offset Amounts

### 11.9.1 Force Majeure Offset Amounts made in respect of Force Majeure occurring prior to Commercial Operation Date

During the Pre COD FMOA Clearing Period defined in Section 8.1.2(a):

- (a) to the extent that EGAT has paid Force Majeure Offset Amounts to the Generator in respect of Force Majeure occurring prior to the Commercial Operation Date, EGAT shall be entitled to deductions on the Monthly Energy Payment due from it during the Pre COD FMOA Clearing Period in an amount equal to such Force Majeure Offset Amounts paid by EGAT pro rated over the entire Pre COD FMOA Clearing Period on a monthly basis and the EGAT Pre COD FMOA Account shall be reduced by an amount equal to such deductions on the Monthly Energy Payment; or
- (b) to the extent that the Generator has paid Force Majeure Offset Amounts to EGAT in respect of Force Majeure occurring prior to the Commercial Operation Date, the Generator shall be entitled to increase the Monthly Energy Payment due to it during the Pre COD FMOA Clearing Period in an amount equal to such Force Majeure Offset Amounts paid by the Generator pro rated over the entire Pre COD FMOA Clearing Period on a monthly basis and the Generator Pre COD FMOA Account shall be reduced by an amount equal to such increases in the Monthly Energy Payment.

Thereafter the balance of the EGAT Pre COD FMOA Account and/or the Generator Pre COD FMOA Account, as the case may be, shall be reset to zero (0).

### 11.9.2 Force Majeure Offset Amounts made in respect of Force Majeure occurring after the Commercial Operation Date



- (a) In the event that there is Force Majeure affecting either or both of the Parties during Relevant Period n (where n is 1, 2, 3, 4, 5 or 6), as applicable, EGAT and the Generator shall pay Force Majeure Offset Amounts to the other Party in accordance with Sections 11.7.4 and 11.8.4, respectively.
- (b) Upon the commencement of the Relevant FMOA Clearing Period n (where n = 1, 2, 3, 4, 5 or 6) defined in Section 8.1.2(b), the Parties shall set off the balance of the EGAT Relevant Period n FMOA Account against the balance of the Generator Relevant Period n FMOA Account and:
- (i) to the extent that the balance of the EGAT Relevant Period n FMOA Account is greater than the balance of the Generator Relevant Period n FMOA Account, EGAT shall be entitled to deductions on the Monthly Energy Payment due from it during the Relevant FMOA Clearing Period n in an amount equal to such excess Force Majeure Offset Amounts paid by EGAT pro rated over the entire Relevant FMOA Clearing Period n on a monthly basis and the EGAT Relevant Period n FMOA Account shall be reduced by an amount equal to such deductions on the Monthly Energy Payment; or
- (ii) to the extent that the balance of the Generator Relevant Period n FMOA Account is greater than the balance of the EGAT Relevant Period n FMOA Account, the Generator shall be entitled to increase the Monthly Energy Payment due to it during the Relevant FMOA Clearing Period n in an amount equal to such excess Force Majeure Offset Amounts paid by the Generator pro rated over the entire Relevant FMOA Clearing Period n on a monthly basis and the Generator Relevant Period n FMOA Account shall be reduced by an amount equal to such increases in the Monthly Energy Payment.

Thereafter the balances of both the EGAT Relevant Period n FMOA Account and the Generator Relevant Period n FMOA Account shall be reset to zero (0).

### 11.9.3 Effect of Termination on Force Majeure Offset Amounts

- (a) Other than all Unpaid Generator FMOA pursuant to a Lao Political Force Majeure referred to in Section 10.2.2(a), all of EGAT's rights and the Generator's obligations in respect of all Force Majeure Offset Amounts owing to EGAT during any of the Relevant Period n, whether or not they have accrued and whether arising by law or otherwise, shall be irrevocably and unconditionally extinguished upon the termination of this

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- (b) Other than all Unpaid EGAT FMOA pursuant to a Thai Political Force Majeure referred to in Section 10.1.2(a), all of the Generator's rights and EGAT's obligations in respect of all Force Majeure Offset Amounts owing to the Generator during any of the Relevant Period n, whether or not they have accrued and whether arising by law or otherwise, shall be irrevocably and unconditionally extinguished upon the termination of this Agreement.

#### **11.10 Currency of Payment of Force Majeure Offset Amounts from the Commercial Operation Date**

11.10.1 Subject to Section 7.3(a), each amount of Force Majeure Offset Amounts due from EGAT and the Generator from the Commercial Operation Date determined in accordance with Sections 11.7.4 and 11.8.4, respectively, shall be made monthly in US Dollars and/or Thai Baht as follows:

- (a) with respect to Force Majeure Offset Amounts (or any part thereof) that is calculated on the basis of the tariff applicable to Primary Energy, the payment of each portion of such Force Majeure Offset Amounts (or any part thereof) denominated in US Dollars or Thai Baht shall be made in the respective currency;
- (b) with respect to Force Majeure Offset Amounts (or any part thereof) that is calculated on the basis of the tariff applicable to Secondary Energy, the payment of such Force Majeure Offset Amounts (or any part thereof) shall be made in Thai Baht; and
- (c) with respect to such part of Force Majeure Offset Amounts due from the Generator in accordance with Section 11.8.4 that is calculated on the basis of a pre-agreed rate of 0.94 US Cent/kWh rather than the tariff applicable to Primary Energy or the tariff applicable to Secondary Energy, the payment of such part shall be made in US Dollars.

11.10.2 The Generator or EGAT, as applicable, shall issue Confirmation Statements and Payment Invoices of such Force Majeure Offset Amounts referred to in Section 11.10.1 in accordance with Sections 6 and 7.

#### **11.11 Termination in respect of Force Majeure**

Either Party may terminate this Agreement by giving thirty (30) days prior written notice to the other Party if a Force Majeure:

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- (a) is a Generator Force Majeure or a Lao Political Force Majeure and such Force Majeure delays the achievement of the Financial Close Date and continues unremedied for a period that when aggregated with all other extensions to the SFCD pursuant to Section 8.3.2(a) is equal to or more than three hundred and sixty-five (365) days;
- (b) is an EGAT Force Majeure referred to in Section 2.1.7(c) and such EGAT Force Majeure continues unremedied for a period that when aggregated with all other EGAT Force Majeure that has been claimed by EGAT in accordance with Section 2.1.7(c) is equal to or more than seven hundred and thirty (730) days, provided, however, that EGAT shall have the right to terminate this Agreement at any time after the commencement of such EGAT Force Majeure;
- (c) is a Thai Political Force Majeure or a Lao Political Force Majeure, and the effects of such Political Force Majeure on the performance by either or both of the Parties of their respective obligations under this Agreement, other than as provided in Sections 11.11(a) and 11.11(d)(i), continues unremedied for more than fifteen (15) Full Calendar Months, provided, however, that the Party responsible for making payments of Force Majeure Offset Amounts in accordance with either Section 11.7 or Section 11.8 with respect to such Thai Political Force Majeure or Lao Political Force Majeure, as the case may be, shall have the right to terminate this Agreement at any time after the commencement of such Force Majeure provided that:
- (i) in the case of Thai Political Force Majeure, EGAT agrees to pay the Termination Payment to the Generator in accordance with the requirements of Section 11.7.5; or
- (ii) in the case of Lao Political Force Majeure, the Generator agrees that EGAT shall have the right to either: (1) require the Generator to pay the Termination Payment; or (2) acquire the ownership of the Generator Assets from the Generator simultaneously upon the payment by EGAT to the Generator of the Termination Payment, all in accordance with the requirements of Section 11.8.5;
- (d) results in destruction or damage to the Generator System the restoration of which is either agreed by the Parties or, in the absence of such agreement, decided by arbitration in accordance with Section 13.2 at the time such destruction or damage was incurred to be reasonably expected to exceed either: (i) twenty-four (24) Full Calendar Months for destruction or damage caused by a Thai Political Force Majeure or a Lao Political Force Majeure; or (ii) thirty (30) Full Calendar Months for destruction or damage caused by any other Force Majeure; or
- (e) is any Force Majeure other than as provided in Sections 11.11(a),

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## Force Majeure

## Section 11

11.11(b), 11.11(c), and 11.11(d), and the effects of such Force Majeure on the performance by either or both of the Parties of their respective obligations under this Agreement continues unremedied for more than twenty-four (24) Full Calendar Months.

For the avoidance of doubt, the survival of rights and obligations of each Party hereunder upon termination of this Agreement pursuant to this Section 11.11 shall be governed by Section 8.1.5.

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**12. CHANGE-IN-LAW AND CHANGE OF GRID CODE****12.1 Change-in-Law Adjustment**

12.1.1 Subject to Sections 12.1.3, 12.1.4 and 12.1.5, if there is a Lao Change-in-Law or a Thai Change-in-Law (as the case may be) that in good faith is expected to increase the costs or decrease the revenues of:

- (a) EGAT (in the case of any Lao Change-in-Law) in connection with its receipt of electrical energy from the Generator System (for the avoidance of doubt, from the perspective of EGAT, such costs include all increased costs incurred by EGAT to produce or otherwise replace the electrical energy unable to be obtained by EGAT from the Generator System and any increased costs incurred by EGAT to construct, operate and maintain all transmission facilities operationally impacted by or relevant to the interconnection of the Generator System with the EGAT System); or
- (b) the Generator (in the case of any Thai Change-in-Law) in connection with: (i) the financing, construction, operation and maintenance of the Generator System and the Common Interconnection Facilities, and/or (ii) the delivery of electrical energy to the EGAT System,

after setting-off any amounts or additional amounts which the relevant Party could reasonably be expected to earn or receive or of any savings which could reasonably be expected to be made by such Party in complying with or otherwise in consequence of such Change-in-Law (including the value of any guarantees, assurances or other rights or claims against any third party arising therefrom), then EGAT, in the case of a Lao Change-in-Law, or the Generator, in the case of a Thai Change-in-Law, shall submit to the other Party a certificate in such form and containing such details as the other Party shall reasonably require setting forth the basis of and the calculations for the amount of such increases in costs or decrease in revenues. Upon receipt by either Party of the certificate referred to in this Section 12.1.1, the Parties shall endeavor in good faith to agree upon such adjustments (if any) to this Agreement, including (without limitation) any adjustments to the applicable tariffs for Primary Energy, Secondary Energy and Excess Energy or the one time payment of a compensation amount as may be necessary to equitably reflect such increase in costs or decrease in revenues actually incurred by the affected Party and to compensate the affected Party therefor. Any dispute or difference between the Parties arising under this Section 12.1.1 shall be referred for determination in accordance with Section 13.

12.1.2 The choice in making the compensation required pursuant to Section 12.1.1 as to whether by means of a one-time payment or through

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adjustments to the applicable tariffs for Primary Energy, Secondary Energy and Excess Energy shall be at EGAT's sole discretion with respect to any compensation required to be paid by EGAT to the Generator pursuant to a Thai Change-in-Law, and shall be at the Generator's sole discretion with respect to any compensation required to be paid by the Generator to EGAT pursuant to a Lao Change-in-Law in accordance with Section 12.1.1. In the event that any compensation is payable prior to the Commercial Operation Date, the Party which shall make payments pursuant to the provisions of Section 12.1.1 shall have the option either to pay within thirty (30) days upon the receipt of Payment Invoice from the other Party or to pay on any date on or before the Commercial Operation Date, provided that when such payment is deferred after the thirtieth day upon receipt of the foregoing Payment Invoice, such deferred payment shall be made together with interest thereon accrued daily (i) at the Minimum Overdraft Rate in respect of any Baht amount, and (ii) at LIBOR in respect of any US Dollar amount, commencing on the thirty-first (31<sup>st</sup>) day after receipt of the foregoing Payment Invoice and continuing until (but excluding) the date when such payment is made. Each Party shall cooperate in good faith with the other Party in connection with any such determination.

12.1.3 No compensation shall be payable pursuant to Section 12.1.1 unless in any Contract Year the aggregate amount of the costs actually incurred and revenue actually lost by either Party in respect of one or more Changes-in-Law exceeds US Dollars Five Hundred Thousand (USD 500,000); provided, always, that the foregoing threshold for obtaining compensation pursuant to Section 12.1.1 shall not apply in respect of any Change-in-Law resulting in the imposition of new Taxes or resulting in a change in the basis of taxation of payments (but excluding the effect of any Change-in-Law on rates of taxation).

12.1.4 For the avoidance of doubt and notwithstanding any other provision of this Agreement to the contrary, other than a prohibition against the sale by the Generator of electrical energy from the Facility to EGAT hereunder, any act or omission on the part of any Thai Governmental Authority (including the promulgation of rules and regulations, the issuance of administrative and policy directives, the development of contracts and other commercial arrangements, and the imposition of other technical, commercial and legal requirements) regarding the following events, conditions and circumstances or combination of events, conditions and circumstances (together with the effects thereof), regardless of whether such act or omission constitutes a Thai Change-in-Law, shall not entitle either Party to the relief afforded by this Section 12.1:

- (a) the establishment, organization and operation or any other aspects of the power pool; or

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- (b) the reorganization, restructuring, corporatization, privatization, reincorporation or abolishment of EGAT or any other governmental organizations associated with the electricity generation, transmission, supply and distribution industry in Thailand; or
- (c) the manner, mechanism or process utilized for determining the exchange rates for the conversion between Thai Baht and foreign currencies.

## 12.2 Change of Grid Code

12.2.1 Subject to Sections 12.2.3 and 12.2.5, if there is any Change of Grid Code that requires a modification to the physical plant, equipment and facilities of the Generator System in order for the operation of the Generator System to conform technically to such Change of Grid Code, EGAT shall compensate the Generator for the direct costs that the Generator must incur to modify and install such physical plant, equipment and facilities and/or the loss of the Generator's revenue in connection with such modification or installation. For the avoidance of doubt, EGAT shall not compensate the Generator for any expenditures, regardless of whether or not incurred to make modifications to plant, equipment or facilities of the Generator System, when such expenditures are not required for the Generator System to comply technically with the requirements of the Change of Grid Code, but which are incurred rather to pursue commercial objectives on the part of the Generator. To obtain such compensation, the Generator shall submit to EGAT a certificate in such form and containing such particulars as EGAT shall reasonably require setting forth the justification for and calculation of the direct costs of such technical change to the Generator System and/or the loss of revenue resulting therefrom. Any dispute or difference between the Parties arising under this Section 12.2.1 shall be referred for determination in accordance with Section 13.

12.2.2 The choice in making the compensation required pursuant to Section 12.2.1 as to whether by means of one-time payment or through adjustments to the applicable tariffs for Primary Energy, Secondary Energy and Excess Energy shall be at EGAT's sole discretion. In the event that the Generator is entitled to compensation pursuant to Section 12.2.1 prior to the Commercial Operation Date, EGAT shall have the option either to pay within thirty (30) days upon the receipt of a Payment Invoice from the Generator or to pay on any date on or before the Commercial Operation Date, provided that when such payment is deferred after the thirtieth day upon receipt of the foregoing Payment Invoice, such deferred payment shall be made together with interest thereon accrued daily (a) at the Minimum Overdraft Rate in respect of any Baht amount, and (b) at LIBOR in respect of any US Dollar amount, commencing on the thirty-first (31<sup>st</sup>) day after receipt of the

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foregoing Payment Invoice and continuing until (but excluding) the date when such payment is made.

12.2.3 No compensation shall be payable pursuant to Section 12.2.1 unless in any Contract Year the aggregate amount of the costs actually incurred and revenue actually lost by the Generator in respect of one or more Changes of Grid Code exceeds US Dollars Five Hundred Thousand (USD 500,000).

12.2.4 Compliance by the Generator with a Change of Grid Code and the loss of Availability attributable to modifications to the physical plant, equipment and facilities of the Generator System required in order for the operation of the Generator System to conform technically to such Change of Grid Code shall not in itself cause the Generator to be in breach of this Agreement, provided, however, that the Generator shall notify EGAT as soon as practicable and in reasonable detail of any circumstances regarding compliance with a Change of Grid Code that would cause the Generator to be unable to perform its obligations under this Agreement. During such period of lost or impaired Availability that is attributable to a Change of Grid Code, EGAT shall continue to make payments to the Generator as if the Change of Grid Code constituted a Thai Political Force Majeure in accordance with the requirements of Section 11.7.4.

12.2.5 EGAT agrees that:

- (a) EGAT will, where reasonably practicable, consult with the Generator prior to implementing any Change of Grid Code; and
- (b) if any Change of Grid Code would represent any of the circumstances below or result in any of the effects set forth below, then the Generator shall not be required to implement such Change of Grid Code until the Parties have agreed in writing on the conditions applicable thereto:
  - (i) discrimination against the Generator when compared to other independent power producers with power generating facilities located in the Lao PDR or in Thailand which deliver electrical energy to the EGAT System (for the avoidance of doubt, EGAT's grant of any exemptions, exceptions, support, extension of time and the like to another independent power producer, where special circumstances are faced by that independent power producer which EGAT regards as reasonably justifying such treatment, shall not be regarded as discrimination against the Generator); or
  - (ii) a Change of Grid Code which falls outside the scope and subject matter of the Grid Code as such Grid Code

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existed on the Execution Date; and

- (iii) a Change of Grid Code that affects or is otherwise related to the requirements associated with those provisions of the Grid Code identified as exemptions to the Grid Code in Part II of Schedule 21.

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### 13. DISPUTE RESOLUTION

#### 13.1 Good Faith Discussions

13.1.1 The Parties agree to seek to resolve diligently all and any disputes arising under or in connection with this Agreement in good faith. Subject to Section 13.1.2, the designated representatives of the Parties shall attempt to resolve amicably the dispute before either Party commences dispute resolution by referring such dispute to arbitration. In the absence of an agreement by the Parties to the contrary, discussions pursuant to this Section 13.1.1 shall be deemed to have commenced on the fifth (5<sup>th</sup>) day after the issuance by one Party to the other Party of a written request for such discussions. If such discussions fail to resolve the dispute within fifteen (15) days (or such longer period as the Parties may agree in writing) after the commencement thereof, then the Parties may refer the dispute to the arbitration tribunal for decision in accordance with Section 13.2, all as required or permitted by this Agreement.

13.1.2 In respect of any dispute which concerns billing or payment (including any dispute in respect of the form or content of any Daily Confirmation Statement, Settlement Confirmation Statement, Meter Reconciliation Statement, Final Confirmation Statement, Generator Payment Invoice, EGAT Payment Invoice or any debit note or credit note issued pursuant to this Agreement, or any amount payable under Section 9), notwithstanding Section 13.1.1, such dispute shall first be referred for mediation to a standing committee which shall be established by the Parties and shall comprise at all times of at least two (2) representatives of each Party (and provided that each Party shall have the same number of representatives on the standing committee as that of the other Party). In the event that: (i) either Party shall have failed to appoint representatives to the standing committee in accordance with this Section 13.1.2 at a time when any such dispute shall arise; or (ii) mediation pursuant to this Section 13.1.2 fails to resolve the dispute within fifteen (15) days (or such longer period as the Parties may agree in writing) after the commencement of such mediation (in the absence of any agreement by the Parties to the contrary, such mediation shall be deemed to have commenced on the fifth (5<sup>th</sup>) day after the issuance of a written notice from one Party to the other requiring the commencement of such mediation), then the Parties shall refer the dispute to the arbitration tribunal for decision in accordance with Section 13.2.

#### 13.2 Arbitration

13.2.1 If either: (a) any dispute (other than any of those disputes referred to in Section 13.1.2) arising under or in connection with this Agreement cannot be settled by discussions within the time period as provided for in Section 13.1.1; or (b) any dispute as referred to in Section 13.1.2 cannot be settled by mediation as provided for in Section 13.1.2, as the

case may be, then the dispute shall be referred to and settled by arbitration. The Parties may mutually agree to refer several disputes to be resolved before the same arbitral tribunal. All arbitration in respect of this Agreement shall be conducted in accordance with the arbitration rules issued by the Arbitration Institute, Office of the Judiciary of Thailand as in force upon commencement of such arbitration (the **Arbitration Rules**) or as otherwise agreed in writing by the Parties.

13.2.2 The arbitral tribunal shall consist of three (3) arbitrators. Each Party shall appoint one (1) arbitrator with suitable knowledge, experience and impartiality for the purposes of the arbitration. The two arbitrators so appointed shall appoint the third arbitrator who shall serve as the chairman of the arbitral tribunal. If a Party fails to appoint its arbitrator within a period of ten (10) Business Days after the date on which the dispute has been referred to the arbitration, or if the two arbitrators appointed cannot agree upon the third arbitrator within a period of ten (10) Business Days after appointment of the second arbitrator, then such arbitrator shall be appointed in accordance with the Arbitration Rules or as otherwise agreed in writing by the Parties.

13.2.3 Any arbitrator to be appointed pursuant to the Arbitration Rules shall be experienced in international commercial agreements and, in particular, the implementation and interpretation of contracts for the purchase of electrical energy from hydropower generating facilities. In regard to any appointment of an arbitrator pursuant to the Arbitration Rules, absent the prior written agreement of both Parties, no arbitrator shall be a present or former employee or agent of, or consultant or counsel to, either Party or any Affiliate thereof.

13.2.4 The arbitral tribunal may rule on its own jurisdiction, including any objections with respect to the existence or validity of this Section 13. For such purpose, this Section 13 shall be treated as an agreement independent of the other provisions of this Agreement and any decision by the arbitral tribunal that all or any part of this Agreement is invalid, illegal or unenforceable shall not entail the invalidity, illegality or unenforceability of this Section 13.

13.2.5 The arbitration shall be conducted in Bangkok, Thailand, provided, however, that the arbitral tribunal may meet for consultation among its members, hearing witnesses, experts or the Parties or for inspection of goods, other property or documents in such other places as the arbitrators shall decide (including Thailand and the Lao PDR).

13.2.6 The arbitration shall be conducted using the Thai language. The arbitrators shall decide the dispute by majority of the arbitral tribunal and shall state in writing the reasons for its decision.

13.2.7 Absent fraud, manifest error, negligence, willful misconduct or bad

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faith on the part of the arbitral tribunal and such other similar grounds for judicial appeal or challenge as are permitted under the Arbitration Rules or such other arbitration rules as are applicable to the subject arbitration, the written arbitration award of the arbitration tribunal shall be final and binding upon both Parties.

Other than as permitted by Section 16, neither Party may publicize or otherwise disclose to others the contents of any arbitration award of the arbitral tribunal.

13.2.8 The costs of such arbitration shall be decided and allocated between the Parties by the arbitral tribunal in its arbitration award.

13.2.9 Notwithstanding any provisions in this Agreement to the contrary, all provisions relating to or in connection with arbitration in this Agreement shall be subject to the Thai Arbitration Act in force.

### 13.3 Exclusivity of Settlement Process

The referral to arbitration pursuant to this Section 13 shall be the exclusive means of settling disputes between the Parties arising under or in connection with this Agreement, and each Party hereby waives in so far as permitted by law any right to resort to any other means of resolving such disputes provided that the provisions of this Section 13 shall not be deemed to:

- (a) preclude either Party from seeking injunctive relief in the courts having jurisdiction within which action to be enjoined is to be taken as required to protect its rights under this Agreement until such time as the relevant dispute is resolved in accordance with this Section 13 and applicable Law;
- (b) preclude either Party from bringing any claim to a court having jurisdiction to enforce any arbitration award rendered in accordance with this Section 13;
- (c) preclude either Party from bringing any claim to the relevant court as a result of a breach by the other Party of its obligation to refer disputes to arbitration and to carry out actions to give effect to this Section 13; or
- (d) preclude either Party from bringing any claim to any court having jurisdiction for enforcement of any arbitration award rendered in accordance with this Section 13 if another court refuses to comply with or enforce (as appropriate) any arbitration award rendered in accordance with this Section 13.

### 13.4 Continued Performance

Unless otherwise agreed in writing, the Parties shall continue to perform their

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respective obligations under this Agreement during the pendency of any proceedings or procedures to resolve a dispute which take place or are carried out by the Parties in accordance with this Section 13.

### 13.5 Survival

The provisions of Section 13 shall survive after the Term Termination Date until all obligations which are intended to survive the termination have expired.

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## 14. INDEMNITY AND LIMITATIONS OF LIABILITY

### 14.1 Indemnification

14.1.1 Subject to Sections 14.2 and 14.3, each Party (the “**Indemnifying Party**”) shall during the Term indemnify and hold the other Party (the “**Indemnified Party**”), its officers, directors, agents, employees, Affiliates, contractors, sub-contractors and any other Person acting on its behalf harmless from and against any and all claims, judgments, losses, liabilities, costs, expenses (including reasonable legal fees) and damages (collectively “**Losses**”) for personal injury, death or damage to property in respect of any Person (except workers’ compensation claims) which (i) are caused by any act by or any omission of the Indemnifying Party or the Indemnifying Party’s officers, directors, agents, employees, Affiliates, contractors, sub-contractors and any other Person acting on behalf of the Indemnifying Party and which constitute a breach of this Agreement, or (ii) arise out of or are attributable to negligence or misconduct on the part of the Indemnifying Party, its officers, directors, agents, employees, Affiliates, contractors, sub-contractors and any other Person acting on behalf of the Indemnifying Party. The Indemnifying Party shall reimburse the Indemnified Party for any and all legal costs and other expenses reasonably incurred by the Indemnified Party in connection with such Losses and other indemnified costs. The Indemnified Party shall hold the benefit of this Section 14.1 for itself and on trust for its officers, directors, agents, employees, Affiliates, contractors, sub-contractors and any other Person acting on its behalf.

14.1.2 Subject to Sections 14.2 and 14.3, the Generator shall defend, indemnify and hold EGAT, its officers, directors, employees, agents, Affiliates, contractors, sub-contractors and any other Person acting on its behalf harmless from and against any and all Losses, fines, penalties and all other costs incurred by EGAT under every applicable environmental Law or other related Law arising out of the condition of the Site, the Generator's ownership or operation of the Generator System and/or, upon severing its ownership, possession and legal responsibility for the Generator System or any portion thereof, the Generator’s failure in cleaning up the Site and the other properties associated with the Generator System, including the discharge, dispersal, release, storage, treatment, generation, disposal or escape of pollutants or other toxic or hazardous substances from the Generator System or any portion thereof, contamination of the soil, air, surface water or groundwater at or around the Site or any pollution abatement, replacement, removal, or other decontamination or monitoring obligations with respect thereto, except to the extent such Losses, fines, penalties and costs incurred by EGAT are solely attributable to acts or omissions of EGAT regarding the Generator System during the periods in which EGAT assumed possession and responsibility for the operation of equipment, maintenance and/or repairs for the Generator

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System or any portion thereof pursuant to Section 10.3 or the negligence or willful misconduct of, or breach of this Agreement by, EGAT, its officers, directors, employees, agents, Affiliates, contractors, sub-contractors and any other Person acting on its behalf.

- 14.1.3 Subject to Sections 14.2 and 14.3, EGAT shall defend, indemnify and hold the Generator, its officers, directors, employees, agents, Affiliates, contractors, sub-contractors and any other Person acting on its behalf harmless from and against any and all Losses, fines, penalties and all other costs incurred by the Generator under every applicable environmental Law or other related Law to the extent arising solely out of EGAT's operation of equipment, maintenance and/or repairs of the Generator System or any portion thereof pursuant to Section 10.3, including the discharge, dispersal, release, storage, treatment, generation, disposal or escape of pollutants or other toxic or hazardous substances from that portion of the Generator System within the operational control of EGAT, the contamination of the soil, air, surface water or groundwater at or around the Site within the control of EGAT or any pollution abatement, replacement, removal, or other decontamination or monitoring obligations with respect thereto, except to the extent such Losses, fines, penalties and costs incurred by the Generator are solely attributable to the negligence or willful misconduct of, or breach of this Agreement or any applicable Law by, the Generator, its officers, directors, employees, agents, Affiliates, contractors, sub-contractors and any other Person acting on its behalf.
- 14.1.4 The Generator shall indemnify EGAT and at all times keep EGAT indemnified against and in respect of any and all Taxes imposed in the Lao PDR arising from or attributable to the supply, installation, operation and/or repairs of the Interconnection Facilities by EGAT, its officers, directors, employees, agents, Affiliates, contractors, sub-contractors and any other Person acting on its behalf (including the Generator as a contractor to construct and install the Common Interconnection Facilities on the part of EGAT in accordance with Section 2.6).
- 14.1.5 EGAT shall indemnify the Generator and at all times keep the Generator indemnified against and in respect of any and all Taxes imposed in Thailand arising from or attributable to the supply, installation, operation and/or repairs of the Interconnection Facilities by the Generator, its officers, directors, employees, agents, Affiliates, contractors, sub-contractors and any other Person acting on its behalf.
- 14.1.6 The Generator shall indemnify EGAT, its officers, directors, employees, agents, Affiliates, contractors, sub-contractors and any other Person acting on its behalf against and in respect of any and all Taxes imposed in the Lao PDR solely arising from or attributable to the exercise of EGAT's step-in rights pursuant to Section 10.3.

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14.1.7 Without prejudice to or limiting any of EGAT's rights under Section 10.2, the Generator shall indemnify EGAT and at all times keep EGAT indemnified against and in respect of any and all Losses and all other costs incurred by EGAT, its officers, directors, employees, agents, Affiliates, contractors, sub-contractors and any other Person acting on its behalf arising out of or attributable to the Generator's breaches of its representations warranties, and undertakings set forth in Sections 15.1.1(j)(1) and/or 15.1.2(e)(ii), respectively.

## 14.2 Limitations on Indemnification

14.2.1 The Parties acknowledge that in the event of any claim for indemnification pursuant to Sections 14.1 or 14.3, the Indemnifying Party shall be liable to the Indemnified Party only in respect of direct Losses and shall not be liable for any indirect, incidental, consequential or punitive Losses (including, without limitation, for loss of use of property, contract, production, revenue or goodwill, cost of business interruption or increased cost of working or other loss of profit, benefit, utility or opportunity howsoever).

14.2.2 The Parties hereby acknowledge and agree that no claim for indemnification shall be made pursuant to Section 14.1 if any Losses which may be incurred or sustained by the Indemnified Party could be recovered from or indemnified by any third party including (without limitation) pursuant to any relevant insurance. If any payment shall have been made by the Indemnifying Party pursuant to Section 14.1 and it shall subsequently be reasonably determined that the Indemnified Party could recover any such amount from one or more third parties, the Indemnified Party shall seek to recover such amount and, upon recovery of all or part thereof, shall pay to the Indemnifying Party the amount recovered from such third parties less any costs and expenses incurred by the Indemnified Party to have obtained recovery of the same.

14.2.3 The Indemnified Party shall inform the other Party in writing of any event which comes to the notice of the Indemnified Party whereby and when it appears in the reasonable opinion of the Indemnified Party that the other Party is or is likely to become liable under Sections 14.1 and 14.3. The Indemnified Party shall take such action and give such information and assistance in connection with its affairs as the Indemnifying Party may reasonably request in writing to avoid, dispute, resist, mitigate, compromise, defend or appeal against any claim in respect thereof and any adjudication with respect thereto. The conduct of any proceedings of whatsoever nature arising in connection with any such claim shall be undertaken by the lawyers nominated by the Indemnifying Party and in that connection the Indemnified Party shall give or cause to be given to the Indemnifying Party all such assistance as the Indemnifying Party may reasonably require in disputing any such claim. The Indemnifying Party shall indemnify and



keep indemnified the Indemnified Party against all Losses of whatsoever nature and all reasonable costs and expenses incurred in complying with its obligations under this Section 14.2.3.

### 14.3 Fines

14.3.1 Any fines, penalties or other costs incurred (whether directly or indirectly) by the Generator or its agents, officers, directors, employees, Affiliates, contractors or subcontractors for non-compliance by the Generator, its agents, officers, directors, employees, Affiliates, contractors or subcontractors or any other Person acting on its behalf with the requirements of any Law or Governmental Approval shall not be reimbursed by EGAT but shall be the sole responsibility of the Generator.

14.3.2 Any fines, penalties or other costs incurred (whether directly or indirectly) by EGAT or its agents, officers, directors, employees, Affiliates, contractors or subcontractors for non-compliance by EGAT, its agents, officers, directors, employees, Affiliates, contractors or subcontractors or any other Person acting on its behalf with the requirements of any Law or Governmental Approval shall not be reimbursed by the Generator but shall be the sole responsibility of EGAT.

14.3.3 If any fines, penalties or other costs are assessed against the Generator by any Governmental Authority in Thailand or court of competent jurisdiction in Thailand due to the non-compliance by EGAT or its agents, officers, directors, employees, Affiliate, contractors or subcontractors or any other Person acting on its behalf with any Law of Thailand or Governmental Approval of Thailand, then EGAT shall indemnify and hold harmless the Generator against any and all losses, liabilities, damages and claims suffered or so incurred. EGAT shall also reimburse the Generator for any and all legal or other expenses reasonably incurred by the Generator in connection with such losses, liabilities, damages and claims.

14.3.4 If any fines, penalties or other costs are assessed against EGAT by any Governmental Authority in the Lao PDR or court of competent jurisdiction in the Lao PDR due to the non-compliance by the Generator or its agents, officers, directors, employers, Affiliates, contractors or sub-contractors or other Person acting on behalf of the Generator with any Law of the Lao PDR or Governmental Approval of the Lao PDR, the Generator shall indemnify and hold harmless EGAT against any and all losses, liabilities, damages and claims suffered or incurred. The Generator shall also reimburse EGAT for any and all legal or other expenses reasonably so incurred.

14.3.5 If any fines, penalties or other costs are assessed against the Generator by a Governmental Authority in the Lao PDR or court of competent

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jurisdiction in the Lao PDR due to the non compliance by EGAT or its agents, officers, directors, employers, Affiliates, contractors or sub-contractors or other Person acting on behalf of EGAT with the requirements of any Law or Governmental Approval of the Lao PDR, then EGAT shall indemnify and hold harmless the Generator against any and all losses, liabilities, damages and claims suffered or so incurred. EGAT shall also reimburse the Generator for any and all legal or other expenses reasonably incurred by the Generator in connection with such losses, liabilities, damages and claims.

- 14.3.6 If any fines, penalties or other costs are assessed against EGAT by a Governmental Authority in Thailand or court of competent jurisdiction in Thailand due to the non compliance by the Generator or its agents, officers, directors, employers, Affiliates, contractors or sub-contractors or other Person acting on behalf of the Generator with the requirements of any Law or Governmental Approval of Thailand, then the Generator shall indemnify and hold harmless EGAT against any and all losses, liabilities, damages and claims suffered or so incurred. The Generator shall also reimburse EGAT for any and all legal or other expenses reasonably incurred by EGAT in connection with such losses, liabilities, damages and claims.

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**15. REPRESENTATIONS, WARRANTIES AND UNDERTAKINGS****15.1 Representations, Warranties and Undertakings on the part of the Generator**

15.1.1 The Generator represents and warrants to EGAT as of the Execution Date as follows:

- (a) the Generator is a company duly incorporated and validly existing under, and is in compliance with, all requirements of applicable Laws of the Lao PDR. The Generator has all of the requisite legal capacity and the full legal right, power and authority to conduct its business and to own its property, as it is presently being conducted and owned or is proposed to be conducted and owned, as contemplated in this Agreement, and to execute, deliver and perform its obligations under this Agreement.
- (b) All of the original registered share capital of the Generator of [ ] shares of [ ] each has been duly allotted and issued, fully paid, in accordance with the Laws of the Lao PDR and relevant constitutional documents of the Generator to the Shareholders in the proportions of: [ ]; and all such shares held by the Shareholders shall rank *pari passu*. Each of the Shareholders is vested with full legal and beneficial title in and to the shares so allotted and issued free from any security interest or other encumbrance except for the purposes of obtaining financing for the Project as contemplated by and in accordance with the restrictions and requirements set forth in this Agreement.
- (c) The execution, delivery and performance by or on behalf of the Generator of this Agreement has been duly authorized by all necessary corporate action and does not and will not (i) require any consent or approval of the Generator's board of directors, shareholders or any other third party other than those that will be or, as the case may be, have been obtained and delivered to EGAT in accordance with Section 1.5; (ii) result in a breach of, or constitute a default under, any provisions of the Generator's constitution, incorporation documents or any indenture, contract or agreement to which it is a party or by which it or its assets may be bound or subject or will otherwise be *ultra vires*, or (iii) violate any Law (including all rules, regulations, orders, writs, judgments, injunctions, decrees, determinations and awards) presently in effect and applicable to the Generator.
- (d) No Governmental Approval by any Governmental Authority or pursuant to any Law as then in effect on the date hereof, other than those that have been obtained, or to be obtained when required, is necessary for the due execution, delivery and

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performance by the Generator of its obligations under this Agreement. The Generator is not aware of any reason for any Governmental Approval so required to be revoked, terminated or suspended.

- (e) This Agreement constitutes a legal, valid and binding obligation of the Generator and is enforceable against the Generator in accordance with all of its terms and conditions.
- (f) There is no pending or, to the best of the Generator's knowledge, threatened action or proceeding before any court or tribunal, Governmental Authority, expert or arbitrator that could reasonably be expected to materially and adversely affect the financial condition or operations of the Generator, the operation of the Generator System, or the ability of the Generator to perform its obligations hereunder or that purports to affect the legality, validity or enforceability of this Agreement.
- (g) At the time of the execution of this Agreement, the Generator has not entered into any contract or other instrument legally binding on the Generator that includes terms or conditions which would either prevent the Generator from performing, or adversely affect the performance by the Generator of, its obligations under this Agreement or prevent or adversely affect the ability of EGAT to exercise and enjoy the benefit of its rights under this Agreement.
- (h) The Concession Agreement and the forms and the issuance of the GOL Undertaking and all related documents will be duly approved by the National Assembly of the Lao PDR within thirty (30) days of the Execution Date, and such approval will, among other things, grant a special exemption or waiver to the Generator and the Project such that any Lao PDR Laws that are inconsistent with the Concession Agreement and/or this Agreement shall have been exempted or waived and such inconsistent Lao PDR Laws shall not be applicable to the Project or to the interpretation of the terms and conditions of the Concession Agreement or this Agreement;
- (i) Upon execution and becoming fully effective, the Concession Agreement and the Lease Agreement shall provide the Generator with all of the property rights, easements, rights-of-way and authorizations needed for the Generator to gain access to, possess, construct, operate, maintain and/or repair the Generator System for the entire Term of this Agreement.
- (j) Upon the Concession Agreement, the Financing Documents and the Project Agreements being duly executed and becoming fully effective,

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*[Handwritten signature]*

- (1) the Concession Agreement, the Financing Documents and/or any of the Project Agreements shall not include any terms or conditions that either would be inconsistent with the terms and conditions of this Agreement or would have a material adverse effect on the respective rights and obligations of the Parties under this Agreement and, in the event of breaches of the representations and warranties set forth in this Section 15.1.1(j)(1), EGAT shall have contractual rights to obtain relief that are available to EGAT under this Agreement, including to obtain indemnification by the Generator pursuant to Section 14.1; and
- (2) the contractual obligations of the Generator regarding environmental management under the Concession Agreement shall be fully effective, legally binding on the Generator and are thereafter able and legally required to be implemented by the Generator in accordance with the requirements of the Concession Agreement.

15.1.2 The Generator undertakes to EGAT as follows:

- (a) If, at any time after the Execution Date, new or additional Governmental Approvals are required to be obtained by the Generator in order to perform its obligations hereunder, the Generator shall promptly obtain the same and in any event before penalties are imposed for any failure to obtain such Governmental Approvals or the Generator would otherwise be in violation of any Law due to its failure to obtain any such new Governmental Approvals.
- (b) Each of the EPC Contracts and the O&M Contract (if any) shall when executed constitute a legal, valid and binding obligation of the Generator enforceable by and against the Generator in accordance with its terms. Each such agreement will not include any terms or conditions which shall prevent or adversely affect the performance by the Generator of its obligations or the exercise by EGAT of any of its rights under this Agreement. Further, each such agreement when executed shall (i) include a covenant on the part of the relevant counterparty thereto that, to the extent required to do so in order to give effect to this Agreement, each such counterparty shall, as directed by the Generator, cooperate in, coordinate with and permit EGAT to exercise EGAT's rights in accordance with Section 10.3, and (ii) be transferable from the Generator to EGAT thereunder without the prior written consent of the relevant counterparty thereto in the event that EGAT exercises its rights to acquire, own, operate and

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maintain the Generator Assets in accordance with Section 17.12.

- (c) The Generator shall upon any and each failure to perform its material duties and obligations under the Financing Documents forthwith notify EGAT in writing of such failure and the Generator shall provide such further details in respect of such failure as EGAT may reasonably require from time to time to establish the nature of such failure and the implications thereof for the performance of the Generator's duties and obligations hereunder.
- (d) The Generator shall comply with all Law applicable to the performance of its obligations under this Agreement and shall refrain from taking any action, or failing to take any action, which could reasonably be expected to result in a lawful act by or a lawful omission of a Governmental Authority which could reasonably be expected to adversely affect the ability of EGAT to exercise its rights and to perform any and each of its obligations under this Agreement, including any act or omission on the part of the Generator which could reasonably be expected to lawfully result in EGAT not being able to obtain or renew any of the Governmental Approvals required by EGAT to perform its obligations hereunder.
- (e) The Generator shall not:
- (i) breach or otherwise fail to perform its obligations under the Concession Agreement when at the time of such breach or failure the Generator knows or should have known that such breach or failure would have a material and adverse impact on: (A) the ability of EGAT to exercise, implement, perform and enforce within the Lao PDR its step-in rights pursuant to Section 10.3 or its acquisition of the Generator Assets upon termination of this Agreement pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5; or (B) the ability of the Generator to perform its material obligations under this Agreement; and
- (ii) amend, vary or supplement the Concession Agreement other than in accordance with the requirements set forth in Section 2.3.4.

## 15.2 Representations, Warranties and Undertakings on the part of EGAT

15.2.1 EGAT represents and warrants to the Generator as of the Execution Date as follows:

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- (a) EGAT is a juristic person duly established pursuant to the Electricity Generating Authority of Thailand Act, B.E. 2511, as amended, and EGAT is validly existing under the laws of Thailand and has all of the requisite legal capacity and the full legal right, power and authority to conduct its business and to own its property, as it is presently being conducted and owned or is proposed to be conducted and owned, as contemplated in this Agreement, and to execute, deliver and perform its obligations under this Agreement.
- (b) The execution, delivery and performance by EGAT of this Agreement has been duly authorized by all necessary action and does not and will not (i) require any consent or approval of EGAT's board of directors or any other third party other than those that will be or, as the case may be, have been obtained and delivered to the Generator in accordance with Section 1.5; (ii) result in a breach of, or constitute a default under, any provisions of EGAT's constitutive or enabling documents or any indenture, contract or agreement to which it is a party or by which it or its assets may be bound or subject or will otherwise be ultra vires; or (iii) violate any Law (including rules, regulations, orders, writs, judgments, injunctions, decrees, determinations or awards) presently in effect and applicable to EGAT.
- (c) No Governmental Approval by any Governmental Authority or pursuant to any Law as then in effect on the date hereof, other than those that have been obtained, or to be obtained when required, is necessary for the due execution, delivery and performance by EGAT of its obligations under this Agreement. EGAT is not aware of any reason for any Governmental Approval so required to be revoked, terminated or suspended.
- (d) This Agreement constitutes a legal, valid and binding obligation of EGAT and is enforceable against EGAT in accordance with all of its terms and conditions.
- (e) There is no pending or, to the best of EGAT's knowledge, threatened action or proceeding before any court or tribunal, Governmental Authority, expert or arbitrator that could reasonably be expected to materially and adversely affect the financial condition or operations of EGAT, the operation of the EGAT System, or the ability of EGAT to perform its obligations hereunder or that purports to affect the legality, validity or enforceability of this Agreement.

15.2.2 EGAT undertakes to the Generator as follows:

- (a) If, at any time after the Execution Date, new or additional

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Governmental Approvals are required to be obtained by EGAT in order to perform its obligations hereunder, EGAT shall promptly obtain the same and in any event before penalties are imposed for any failure to obtain such Governmental Approvals or EGAT would otherwise be in violation of any Law due to its failure to obtain any such new Governmental Approvals.

- (b) EGAT shall comply with all Law applicable to the performance of its obligations under this Agreement and shall refrain from taking any action, or failing to take any action, which could reasonably be expected to result in a lawful act by or a lawful omission of a Governmental Authority which could reasonably be expected to adversely affect the ability of the Generator to exercise its rights and to perform any and each of its obligations under this Agreement, including any act or omission on the part of EGAT which could reasonably be expected to lawfully result in the Generator not being able to obtain or renew any of the Governmental Approvals required by the Generator to perform its obligations hereunder.
- (c) EGAT shall not:
- (i) breach or otherwise fail to perform its obligations under clause 7 of the GOL Undertaking when at the time of such breach or failure EGAT knows or should have known that such breach or failure would have a material and adverse impact on the ability of the Generator to exercise, implement, perform and enforce its rights and obligations regarding the sale and/or transfer of the Generator Assets as permitted by clause 8(b) of the GOL Undertaking; and
  - (ii) amend, vary, supplement or novate the GOL Undertaking without the prior written consent of the Generator.

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**16. CONFIDENTIALITY AND ANNOUNCEMENTS****16.1 Confidential Information**

For the purposes of this Agreement, “**Confidential Information**” shall include all commercially sensitive or proprietary information which one Party (the “**Receiving Party**”) receives from the other Party that is either:

- (a) relating to the negotiation, implementation or termination of this Agreement;
- (b) provided to either Party pursuant to this Agreement or the Grid Code, or in the course of negotiating this Agreement; or
- (c) concerning the operations, contracts, commercial or financial affairs of either Party.

For the avoidance of doubt, Confidential Information includes the Concession Agreement.

**16.2 General Restrictions on the Parties**

The Receiving Party shall not at any time, whether before or after the Term Termination Date, divulge, or allow or permit its officers, directors, employees, agents, Affiliates, contractors, sub-contractors or any other Person acting on its behalf to divulge, any Confidential Information to any other Person, except:

- (a) in the circumstances set out in Section 16.3;
- (b) to the extent otherwise expressly permitted by this Agreement; or
- (c) with the prior written consent of the other Party.

**16.3 Exceptions**

The restrictions imposed by Section 16.2 shall not apply to the disclosure of any information:

- (a) which now or hereafter comes into the public domain otherwise than as a result of a breach of an undertaking of confidentiality under this Agreement;
- (b) which is required to be disclosed by law (including information which is required to be disclosed by any Governmental Approval with which the Receiving Party is required to comply);
- (c) which is required to be disclosed by any relevant securities exchange commissions or relevant stock exchanges and such information has

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been required to be disclosed on such an urgent basis that there was not a sufficient reasonable period of time during which the prior written consent of the disclosing Party could be obtained;

- (d) which is required to be disclosed to a court or tribunal, arbitrator, or experts in the course of proceedings to which the Receiving Party is a party, provided that the other parties to such proceedings shall only obtain such information if they are, to the extent the application of such requirements can be compelled by law, bound by the confidentiality obligations set forth in this Section 16;
- (e) which is disclosed to the directors, employees, agents, contractors (including construction contractors and operations and maintenance contractors), Affiliates, proposed assignees and substitutes, consultants, professional advisors and/or other Persons acting on behalf of the Receiving Party, in each case on the basis that the Party or Person permitting any such disclosure clearly marks such information as “CONFIDENTIAL” and such Confidential Information is not to be disclosed to any Person other than a Person permitted hereunder to receive the same and provided further that,
- (i) in the case of the Receiving Party disclosing the same to its officers, directors, employees, and agents, the provisions of Section 16.4 shall apply,
- (ii) with respect to disclosures to independent contractors, consultants, professional advisors and other Persons acting on behalf of the Receiving Party, and to the officers, directors, employees, agents and other Persons acting on behalf of all such Persons, provided that all such Persons require the receipt of such Confidential Information to carry out the function for which they are employed or retained and, provided further, to the extent permitted by applicable Law, such Persons are bound by the requirements of this Section 16; and
- (iii) with respect to any and all disclosures of such Confidential Information, the Receiving Party allowing or initiating such disclosure shall be responsible for any disclosure of such Confidential Information by a Person permitted hereunder to receive such Confidential Information to any other Person not so permitted as if such disclosure had been made by that Party;
- (f) which is disclosed to the shareholders of the Generator at the time of such disclosures, the Lenders, the GOL, the insurers (and reinsurers) of the Generator and/or the Generator System, or to the employees, directors, officers, agents, consultants, professional advisers and other Persons acting on behalf of any such Persons or any agent appointed on their behalf or of either Party, provided that the disclosure of such Confidential Information is limited to Persons who need such Confidential Information for the purpose of carrying out the functions

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for which they are employed or retained and, provided, further, to the extent permitted by applicable Law, such recipients are bound by the requirements of this Section 16;

- (g) which is required to be disclosed in compliance with the Grid Code; and
- (h) which was either lawfully in the possession of the recipient prior to its disclosure by the other Party (as evidenced by written records) or which was lawfully obtained by that recipient from a source of information independent from the Party which provided such Confidential Information (such as information received independently from a third party with the full rights of disclosure or information which was obtained lawfully by the recipient through its own research);

and provided that, in so far as reasonably practicable, no disclosure shall be made by a Party under this Section 16.3 unless written notice thereof shall have been given to the other Party either prior to such disclosure or otherwise shall be given as soon as reasonably practicable thereafter.

#### 16.4 Internal Procedures

With effect from the Execution Date, each Party shall adopt procedures within its organization for ensuring the confidentiality of all Confidential Information which it is obliged to preserve as confidential under Section 16.2. Those procedures shall be as follows:

- (a) Confidential Information will only be disseminated within the Receiving Party and to its independent agents, consultants, professional advisers and other Persons acting on its behalf who need such Confidential Information for the purpose of carrying out the functions for which they are employed or retained;
- (b) Confidential Information shall not be used by the Receiving Party for the purpose of obtaining for such Party or any Affiliate thereof or for any other Person any contract or arrangement for the supply of electricity to any Person save in respect of the arrangements contemplated hereunder without the prior written consent of the originator of such Confidential Information;
- (c) employees, directors, officers, agents, contractors, professional advisers and other Person acting on its behalf in receipt of Confidential Information will be made fully aware of such Party's obligations to maintain and preserve confidentiality in relation thereto; and
- (d) any copies of Confidential Information, whether in hard copy or electronic form, shall be clearly identified as "CONFIDENTIAL".

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**16.5 Term of Confidentiality**

The requirements regarding the use and disclosure of Confidential Information set forth in this Section 16 shall cease to apply on the date falling sixty (60) Full Calendar Months after the Term Termination Date.

**16.6 Public Announcements**

16.6.1 Subject to Section 16.6.2, no public announcement or statement regarding the signature, performance or termination of this Agreement shall be issued or made unless and until both Parties shall have been furnished with a copy of the proposed announcement or statement and shall have approved it in writing (such approval not to be unreasonably withheld or delayed).

16.6.2 Neither Party shall be prohibited from issuing or making any such public announcement or statement which is: (i) required to be made to comply with any applicable Law and regulations or the principle of good governance; or (ii) required to be issued as part of the routine process of arranging debt and equity financing to achieve Financial Close and other subsequent financing and refinancing permitted by this Agreement; or (iii) required to be made to comply with any applicable Law or the regulations of any recognized stock exchange or securities exchange commission relating thereto, upon which the share capital of or any debt instrument issued or guaranteed by such Party (or any parent undertaking of such Party) is from time to time listed or dealt in or in response to a requirement of a governmental authority of competent jurisdiction provided that such announcement or statement shall only contain such information as shall be required by such Law, regulation or requirement.

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**17. MISCELLANEOUS PROVISIONS****17.1 Amendments**

This Agreement may not be amended except by an agreement in writing signed by both of the Parties.

**17.2 Waivers of Rights**

No delay or forbearance by either Party in exercising any right, power, privilege or remedy under this Agreement shall operate to impair or be construed as a waiver of such right, power, privilege or remedy. For the avoidance of doubt, any waiver by either Party of the obligations of the other Party shall only be operative if evidenced by an agreement in writing signed by both Parties. Any single or partial exercise of any such right, power, privilege or remedy shall not preclude any other or further exercise thereof or the exercise of any other right, power, privilege or remedy.

**17.3 Notices**

17.3.1 With the exception of notices or other communications which are given pursuant to applicable provisions of the Grid Code (as to which the procedures provided for in the Grid Code shall apply) or as otherwise expressly provided in this Agreement, any notice or other communication to be given by one Party to the other Party under, or in connection with the matters contemplated by, this Agreement shall be sent to the address and/or facsimile number given and marked for the attention of the person specified in Schedule 29, or as otherwise provided in this Agreement or to such other address and/or facsimile number of such Party or its agent and/or marked for such other attention as it shall from time to time designate by written notice to the other Party in accordance with the provisions of this Section 17.

17.3.2 With the exception of notices which are given pursuant to applicable provisions of the Grid Code (as to which the procedures provided for in the Grid Code shall apply) or as otherwise expressly provided in this Agreement or agreed to in writing by the Parties, any notice or other communication to be given by one Party to the other Party under, or in connection with the matters contemplated by, this Agreement shall be in either English or Thai language, as appropriate, and shall be given by letter delivered by hand (including by courier) or sent by first class prepaid post (airmail if from one country to another) or facsimile transmission, and shall be deemed to have been delivered to and received by such Party:

- (a) in the case of delivery by hand, when actually received;
- (b) in the case of first class prepaid post, on the third day following the day of posting or, if sent by airmail from one country to

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another, on the sixth day following the day of posting; or

(c) in the case of facsimile transmission, at the time of dispatch;

and, in proving service of any notice, it will be sufficient to prove, in the case of a letter, that such letter was properly stamped, addressed and placed in the post and, in the case of a fax, that such fax was duly dispatched to the fax number specified pursuant to Section 17.3.1, evidenced by the facsimile transmission report generated by the sending fax machine recording that the transmission was duly dispatched. It shall in any event be a condition of valid giving of notice by fax that the sender retains the facsimile transmission report for future reference and inspection.

#### 17.4 Assignment

17.4.1 Other than the assignments, novations and other transfers expressly identified in Section 17.4.3 as exempted from the requirements of this Section 17.4.1, neither Party shall assign, novate, transfer or encumber all or any of its rights or obligations (in whole or in part) under this Agreement, without first obtaining the prior written consent of the other Party, provided, further, that no novation or transfer of an obligation hereunder requiring the consent of the other Party pursuant to this Section 17.4.1 (regardless of whether or not such consent has been obtained) shall become effective unless and until the third party to whom such obligations are to be transferred has covenanted directly with the other Party to observe and perform all of the terms and conditions of this Agreement regarding or otherwise related to such obligations and the other Party has received a certified copy of, as the case may be, such novation or transfer.

17.4.2 Other than pursuant to Section 17.4.3(a), no assignment, novation or transfer by either Party of any or all of their respective rights or obligations under this Agreement to a third party, either in whole or in part and regardless of whether or not the consent of the other Party is required to effectuate such transfer of such rights and obligations pursuant to Section 17.4.1, shall be effective unless and until all other contracts and agreements to which the transferring Party is a party, if any, and that must be transferred to such third party in order to provide for the continued construction, operation and maintenance of the Generator System or the EGAT Transmission Facilities, as the case may be, have each (i) been transferred to such third party, and (ii) become fully effective on or prior to the assignment, novation or transfer of such rights and obligations hereunder to such third party.

17.4.3 The requirements regarding assignments, novations, transfers and encumbrances of the rights and obligations of the Parties under this Agreement:

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- (a) as set forth in Sections 17.4.1 or 17.4.2, shall not apply to an assignment, novation, transfer or encumbrance by the Generator of all or any of its rights, obligations, title and interest in, under or to this Agreement by way of security to the Lenders in accordance with the terms of the Financing Documents. With respect to such assignment as security to the Lenders, EGAT agrees to:
- (i) enter into a consent to the assignment of this Agreement by way of security to the Lenders and in the form and substance set forth in Schedule 26; and
  - (ii) provide such additional documentation to support the Financial Close and execute all such acknowledgments and consents in respect of the assignment of this Agreement to the Lenders as the Generator may reasonably request from time to time;

provided that the Generator shall reimburse EGAT for all reasonable costs and expenses incurred in relation thereto, including the drafting, negotiation and execution of the consent required of EGAT pursuant to Section 17.4.3(a);

- (b) as set forth in Section 17.4.1, shall not apply to an assignment, novation, transfer by EGAT of all or any of its rights or obligations, title and interest in, under or to this Agreement arising out of or in connection with:
- (i) the establishment, organization and operation or any other aspects of the power pool; or
  - (ii) the reorganization, restructuring, corporatization, privatization and/or reincorporatization of EGAT or any other governmental organizations associated with the electricity generation, transmission, supply and distribution industry in Thailand;

provided that in the event that the foregoing circumstances results in another Person succeeding EGAT as a Party to this Agreement, such Person shall satisfy one or more of the following requirements:

- (i) such Person is owned or controlled by the Government of Thailand;
- (ii) such Person has the legal status and the technical and financial capability to perform the material obligations of EGAT under this Agreement; and
- (iii) such Person is reasonably acceptable to the Generator;

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- (c) as set forth in Section 17.4.1, shall not apply to any security interest or encumbrance granted at the Financial Close by any shareholder of the Generator (or its Affiliate) over all or any of its rights, title or interest in the shares of the Generator to:
- (i) the Lenders in accordance with the terms of the Financing Documents;
  - (ii) its insurers in connection with any political risk insurance effected by such shareholder in respect of its rights, title or interest in the shares of the Generator; or
  - (iii) with respect to the GOL or its nominee referred to in Section 15.1.1(b) only, its financiers in connection with any financing obtained by the GOL or such nominee to fund its equity contribution in the Generator;
- (d) as set forth in Section 17.4.1, shall not apply to an assignment, novation, transfer or encumbrance by the Generator of all of its rights, obligations, title and interest in, under or to this Agreement to the GOL in connection with clause 7 of the GOL Undertaking; and
- (e) as set forth in Section 17.4.1, shall not apply to an assignment, novation or transfer by the Generator of all of its rights, obligations, title and interest in, under or to this Agreement to EGAT in connection with EGAT's acquisition of the Generator Assets in accordance with Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 of this Agreement.

17.4.4 Notwithstanding the foregoing provisions of Section 17.4.3, as conditions of the written consent by EGAT to the transfer by the Generator and/or the Lenders of any of its or their rights and/or obligations under this Agreement, such consent not to be unreasonably denied or delayed by EGAT, the Parties agree that EGAT will require that:

- (a) any substitute for the Generator under this Agreement that may be appointed by the Lenders, any nominee or transferee of the Lenders, or any purchaser of the Generator or of any of its rights, obligations, title and interest under this Agreement from the Lenders upon a foreclosure sale or other exercise by them of their security under the Financing Documents, shall have the legal status and the technical and financial capability reasonably acceptable to EGAT to perform the material obligations of the Generator under this Agreement;
- (b) any such substitute, nominee, transferee or purchaser shall agree in writing to be unconditionally bound by all the terms,

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conditions and provisions of this Agreement; and

- (c) the Lenders shall have given EGAT at least thirty (30) days prior written notice of the proposed substitution, nomination, transfer or purchase, as applicable, in order to review the qualification of such proposed substitute, nominee, transferee or purchaser in order to evaluate whether the same satisfies the requirements of Section 17.4.4(a).

EGAT shall have the right to reject such transfer if it does not conform to the conditions set forth herein.

### 17.5 Effect of Illegality

17.5.1 If at any time and for any reason whatsoever any provision of this Agreement is or becomes invalid, illegal or unenforceable, or is declared by any court of competent jurisdiction or any other Governmental Authority of competent jurisdiction to be invalid, illegal or unenforceable or if such Governmental Authority:

- (a) refuses, or formally indicates an intention to refuse, authorization of any of the provisions of or arrangements contained in this Agreement (in the case of a refusal either by way of outright refusal or by way of a requirement that this Agreement be amended or any of its provisions be deleted or that a Party give undertakings or accept conditions as to future conduct that are not already required of the Party hereunder); or
- (b) formally indicates that the continued operation of any provision of this Agreement may expose the Parties to sanctions under any Law or requests any Party to give undertakings or to accept conditions as to future conduct that are not already required of the Party hereunder in order that such Party not be subject to such sanctions;

then, in any such case, the Parties will negotiate in good faith with a view to agreeing upon one or more provisions which may be substituted for such invalid, unenforceable or illegal provision or such provision refused or indicated by such Governmental Authority referred to in this Section 17.5.1, which substitute provisions to be satisfactory to all relevant Governmental Authorities and produce as nearly as is practicable in all circumstances the appropriate balance of the commercial interests of all Parties, provided that in the event that such invalid, unenforceable or illegal provision or such provision refused or indicated by such Governmental Authority referred to in this Section 17.5.1 is attributable to the act or omission or the misrepresentation of one Party, then such Party shall be solely responsible for any loss, consequence or deprivation of benefits under

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this Agreement associated with either or both of the Parties pursuant to such substitution of the invalid, unenforceable or illegal provision or such provision refused or indicated by such Governmental Authority referred to in this Section 17.5.1 by one or more provisions that are satisfactory to all relevant Governmental Authorities.

17.5.2 The remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by such invalid, illegal or unenforceable provision.

## 17.6 Entire Agreement

17.6.1 This Agreement contains or expressly refers to the entire agreement between the Parties with respect to its subject matter and, except with respect to statements made fraudulently, expressly excludes any warranty, condition or other undertaking implied at law or by custom (to the extent such custom is permitted by law) and supersedes all previous drafts, agreements, undertakings, representations, warranties, promises, assurances and arrangements of any nature whatsoever, whether oral or in writing, with respect to its subject matter.

17.6.2 Each Party hereby acknowledges and confirms that it does not enter into this Agreement in reliance on any representation, warranty or other undertaking by the other Party not expressly set forth in this Agreement, provided that such acknowledgment and confirmation does not extend to fraudulent representations or fraudulent statements.

17.6.3 The Schedules attached to this Agreement shall form an integral part of this Agreement.

## 17.7 Counterparts

This Agreement shall be executed in two (2) counterparts, one for EGAT and one for the Generator, each of which when executed and delivered shall constitute an original, but shall together constitute one and the same agreement.

## 17.8 Language

This Agreement is being executed and delivered in the English language and all modifications, amendments and waivers of any provision of this Agreement shall be in the English language. All other documents, notices and communications, written or otherwise, between the Parties in connection with this Agreement shall be in either English or Thai as appropriate. However, the Parties agree that the Grid Code shall be in the English language and the written communications related thereto and regarding all matters related to the operations of the Generator System shall be in either English or Thai as appropriate.

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**17.9 Set Off**

- (a) EGAT shall have the right (but not the obligation) at any time prior to the Term Termination Date to set off any and all sums due and payable by the Generator to EGAT against the Monthly Energy Payment and/or all other payments that are due and payable by EGAT to the Generator, provided that: (i) EGAT shall not be entitled to set off more than twenty percent (20%) of the Monthly Energy Payment during the period prior to the date on which the Debt has been repaid in full to the Lenders; and (ii) the restriction regarding the amount of any such set off in Section 17.9(a)(i) shall no longer apply once the Debt has been repaid in full to the Lenders.
- (b) To the extent that the Debt remains outstanding on and after the Term Termination Date, EGAT shall have no right to set off any sums due and payable by the Generator to EGAT against the Monthly Energy Payment and any Termination Payment owed to the Generator by EGAT that is otherwise due and payable by EGAT to the Generator; provided, further, that upon such Debt having been repaid in full to the Lenders, EGAT shall have the right (but not the obligation) to set off any and all sums due and payable by the Generator to EGAT against any and all sums otherwise due and payable by EGAT to the Generator, including any Monthly Energy Payments and the Termination Payment, without any restriction as to the amount of such set off.

**17.10 Third Parties**

This Agreement is intended solely for the benefit of the Parties. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors and permitted assignees. Nothing in this Agreement should be construed to create any duty or liability to, or standard of care with reference to, any other Person.

**17.11 Equity Transfer Restrictions****17.11.1 Restrictions of Transferability**

Subject to Sections 17.11.2 and 17.11.3, the Generator shall ensure that:

- (a) after the Execution Date and until the first anniversary of the Commercial Operation Date, no shareholder of the Generator shall transfer any of its respective equity ownership interest in the Generator to any other Person if such transfer will reduce that shareholder's aggregate equity ownership interest in the Generator to fifty percent (50%) or less of its aggregate equity ownership interest in the Generator existing as of the Execution Date; provided further that:

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- (i) if such equity ownership interest that satisfied the condition regarding the amount of transfer as provided above is transferred to a shareholder of the Generator, no approval from EGAT shall be required; or
  - (ii) if such equity ownership interest that satisfied the condition regarding the amount of transfer as provided above is transferred to any other Person other than a shareholder of the Generator, such transfer shall not occur without the prior written approval of EGAT, such approval not to be unreasonably withheld or delayed; and
- (b) after the first anniversary of the Commercial Operation Date until the fifth anniversary of the Commercial Operation Date, no shareholder of the Generator shall transfer any of its respective equity ownership interest in the Generator to any other Person if such transfer will reduce that shareholder's aggregate equity ownership interest in the Generator to twenty-five percent (25%) or less of its aggregate equity ownership in the Generator existing as of the Execution Date; provided further that:
- (i) if such equity ownership interest that satisfied the condition regarding the amount of transfer as provided above is transferred to a shareholder of the Generator, no approval from EGAT shall be required; or
  - (ii) if such equity ownership interest that satisfied the condition regarding the amount of transfer as provided above is transferred to any other Person other than a shareholder of the Generator, such transfer shall not occur without the prior written approval of EGAT, such approval not to be unreasonably withheld or delayed.

#### 17.11.2 Qualifications to Equity Transfer Restrictions

- (a) Any transfer by a shareholder of the Generator (or any of its Affiliates) of any of its equity ownership interest in the Generator to any other Person shall be notified to EGAT at least fourteen (14) days in advance.
- (b) Any shareholder of the Generator or any transferee of such shareholder shall have the right to transfer its equity ownership interest in the Generator notwithstanding the equity ownership transfer restrictions set forth in Section 17.11.1 so long as such transfer has been approved in writing by EGAT prior to such transfer, such approval to be made or withheld at EGAT's sole discretion.
- (c) Any transferee (other than Persons acquiring shares in the

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Generator traded in any stock or securities exchange) shall be subject to the same conditions imposed hereby on transfers made by it as are imposed with respect to transfers by the original shareholders of the Generator.

- (d) The equity ownership transfer restrictions set forth in Section 17.11.1 shall not apply in the event that the equity ownership interests in the Generator are transferred to or as directed by any of the Lenders, the providers of political risk insurance or the financiers referred to by Section 17.4.3(c) pursuant to the enforcement by such parties of their security interests therein.

### 17.11.3 Thai Project Participation

Absent prior written consent on the part of EGAT, and at all times during the entire Term, not less than twenty percent (20%) of the issued share capital of the Generator shall be held by one or more non-natural Persons of Thai nationality. For the purposes of this Section 17.11.3, a non-natural Person of Thai nationality shall be one in which control shall be vested in one or more natural Persons of Thai nationality, where any natural Person that owns directly or indirectly securities having in excess of fifty percent (50%) of the voting power at general meetings of a company or corporation or in excess of fifty percent (50%) of the partnership or other ownership interests of another non-natural Person (other than as limited partner of such non-natural Person) will be deemed to control such company or corporation or other non-natural Person.

## 17.12 **Transfer of Generator Assets**

- 17.12.1 (a) (i) During the period from the Term Termination Date until EGAT notifies the Generator of its election in accordance with Sections 10.2.3 or 11.8.5, the Generator shall cooperate with and assist EGAT in any due diligence investigation made by EGAT into: (aa) the circumstances related to the termination of this Agreement and/or the Concession Agreement; (bb) the condition and value of the Generator Assets and any other issues then outstanding related to the capabilities and operating performance of the Generator Assets in a manner that is consistent with the Concession Agreement and international practices; (cc) the status of outstanding and current claims made by and against the Generator; (dd) the Generator's compliance with its obligations under the Concession Agreement, Governmental Approvals and applicable Law; and (ee) the extent of the Generator's liabilities under the Concession Agreement, Governmental Approvals and applicable Law, and, in that regard, upon reasonable

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notice in writing by EGAT, subject to reasonable assurances as to confidentiality, the Generator shall provide EGAT prompt and reasonable access to the Generator Assets and to the chief executive officer and other officers of the Generator and records of the Generator related to all such matters and the Generator shall exercise reasonable efforts to obtain for the same such information regarding the Generator Assets as is reasonably requested and relevant to such matters.

- (ii) During the period from the Term Termination Date until the date on which the Generator is to transfer the Generator Assets to the EGAT Designated Assignee pursuant to Section 17.12.2(a), the Generator shall cooperate with EGAT in any due diligence investigation made by EGAT in respect of: (aa) the operating performance of the Generator Assets; (bb) the status of outstanding and current claims made by and against the Generator; (cc) the Generator's compliance with its obligations under the Concession Agreement, Governmental Approvals and applicable Law; and (dd) the extent of the Generator's liabilities under the Concession Agreement, Governmental Approvals and applicable Law, and, in that regard, upon reasonable notice in writing by EGAT, the Generator shall provide EGAT prompt and reasonable access to the Generator Assets and to the chief executive officer and other officers of the Generator and records of the Generator related to all such matters. For the avoidance of doubt, in the event that EGAT is obligated to pay the Generator the Termination Payment and simultaneously acquire the Generator Assets from the Generator through the EGAT Designated Assignee pursuant to Sections 10.1.3 or 11.7.5, such due diligence investigation permitted to EGAT shall not relieve for any reason EGAT from making the Termination Payment and simultaneously acquiring the Generator Assets from the Generator through the EGAT Designated Assignee pursuant to Sections 10.1.3 or 11.7.5.
- (b) During the period from the Term Termination Date until EGAT notifies the Generator of its election in accordance with Sections 10.2.3 or 11.8.5 and during the period after EGAT has elected or is otherwise obligated to acquire the Generator Assets from the Generator through the EGAT Designated Assignee pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 until the earlier to occur of: (aa) EGAT having acquired the Generator Assets by having the ownership of the Generator Assets transferred to the EGAT Designated Assignee in

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accordance with Section 17.12 (including that period prior to such transfer of the ownership of the Generator Assets that occurs following the payment of the Termination Payment made by EGAT pursuant to Section 17.12.2(b)(i)); and (bb) it having been agreed or determined that EGAT is incapable of so acquiring the Generator Assets, the Generator shall not take any action or consent to any action to be or being taken that would result in either the ownership of the Generator Assets not being able to be transferred to the EGAT Designated Assignee or that renders the Generator unable to satisfy its obligation to make the Termination Payment to EGAT. Such actions that the Generator shall neither take nor otherwise so consent to shall include:

- (i) dismantling the Generator System;
- (ii) any action that adversely affects the condition of the Generator System in respect of the operation and maintenance thereof;
- (iii) terminating the Concession Agreement or permitting (if its consent during that period to such termination is required) the termination of the Concession Agreement;
- (iv) exercising any rights pursuant to this Agreement or the Concession Agreement to sell or transfer the ownership of the Generator Assets or any part thereof to any other Person; and
- (v) other than making such payments that are necessary to satisfy any contractual obligation under this Agreement, any Project Agreement, any Financing Document or any other agreement incurred by it that are, in the case of each such agreement, consistent with its obligations under this Agreement or as required in order to comply with any Law of the Lao PDR or Thailand, any action that would otherwise reduce the financial capability of the Generator to satisfy its obligation to make the Termination Payment.

- 17.12.2 (a) In the event that EGAT elects or is otherwise obligated pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 to acquire the Generator Assets through the EGAT Designated Assignee and the transfer of ownership of the Generator Assets from the Generator to the EGAT Designated Assignee is able to be effected, then, simultaneously upon payment by EGAT or the EGAT Designated Assignee of the Termination Payment due to the Generator, the Generator shall: (aa) transfer the ownership of all of the Generator Assets to the EGAT Designated Assignee; and (bb) assign, novate or otherwise transfer the

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Assigned Rights and Obligations to the EGAT Designated Assignee in a manner such that the EGAT Designated Assignee shall become in all respects thereof, as of the payment of the Termination Payment by EGAT or the EGAT Designated Assignee, the successor to and the substitute owner in all respects of the Generator Assets and which complies with the terms required by the agreements applicable to the relevant Generator Assets to be satisfied in order to effect that transfer and novation which shall include, in the case of the Concession Agreement, satisfaction of clause 5(j) of the GOL Undertaking including, as required by clause 5(j)(iv) thereof, the execution by the Generator of an assignment, assumption and release agreement in respect of the Concession Agreement in the form set out in Annex A of the GOL Undertaking.

- (b) In the event that EGAT is obligated to acquire the Generator Assets pursuant to Sections 10.1.3 or 11.7.5 and either EGAT or the EGAT Designated Assignee has proffered payment of the Termination Payment due to the Generator, but the transfer of ownership of all of the Generator Assets from the Generator to the EGAT Designated Assignee is nevertheless unable to be effected, then:
- (i) if that inability to transfer the ownership of the Generator Assets is attributable to any or any combination of: (aa) EGAT; (bb) the EGAT Designated Assignee; (cc) the Law of Thailand; and/or (dd) any event, condition or circumstance described in Section 11.1(c) as constituting a Thai Political Force Majeure, EGAT shall nonetheless be obligated to make that Termination Payment to the Generator in which event, if the ownership of the Generator Assets is able to be transferred to the EGAT Designated Assignee at any time subsequent to EGAT having made that Termination Payment, then the Generator shall at that subsequent time: (xx) transfer the ownership of the Generator Assets to the EGAT Designated Assignee; and (yy) assign, novate or otherwise transfer the Assigned Rights and Obligations to the EGAT Designated Assignee as provided in Section 17.12.2(a); or
- (ii) if that inability to transfer the ownership of the Generator Assets is attributable to any or any combination of: (aa) the Generator (including the inability to transfer the Generator's rights and obligations under the Concession Agreement to the EGAT Designated Assignee in order to cause the EGAT Designated Assignee to become the party of the

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Concession Agreement); (bb) the Law of the Lao PDR; and/or (cc) any event, condition or circumstance described in Section 11.1(b) as constituting a Lao Political Force Majeure, EGAT shall not be obligated to make that Termination Payment to the Generator.

- (c) In the event that EGAT elects to acquire the Generator Assets pursuant to Sections 10.2.3 or 11.8.5 but the ownership of the Generator Assets is unable to be transferred from the Generator to the EGAT Designated Assignee, for any reason, then EGAT shall be entitled to either:
- (i) obtain the Termination Payment from the Generator, as determined in accordance with Schedule 9, in lieu of its acquisition of the Generator Assets; or
  - (ii) preserve and pursue its claims for contractual relief and damages regarding the inability of the ownership of the Generator Assets to be transferred from the Generator to the EGAT Designated Assignee.

provided that if such inability to transfer is attributable to the causes provided in this Section 17.12.2(b)(ii), EGAT shall not be prohibited from exercising both of the rights provided in Sections 17.12.2(c)(i) and 17.12.2(c)(ii) above.

- (d) In the event that EGAT elects or is otherwise obligated pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 to acquire the Generator Assets through the EGAT Designated Assignee or the Generator is obligated to make the Termination Payment to EGAT pursuant to Sections 10.2.3 or 11.8.5, then EGAT shall, subject to Sections 17.12.2(b) or 17.12.2(c), as the case may be, acquire the Generator Assets through the EGAT Designated Assignee and make the relevant Termination Payment or the Generator shall, subject to Section 17.12(e), make the relevant Termination Payment, as the case may be, on or before the Scheduled Termination Payment Date. Notwithstanding this Section 17.12.2(d), any failure by EGAT to make the relevant Termination Payment to the Generator by the Scheduled Termination Payment Date shall not be deemed to be an inability to transfer the ownership of the Generator Assets that is attributable to EGAT for the purpose of Section 17.12.2(b)(i).
- (e) In the event that the Generator is obligated to make the Termination Payment to EGAT pursuant to Sections 10.2.3 or 11.8.5 and the GOL is obligated to compensate the Generator's investment in the Project and other assets that are to be handed over to the GOL in accordance with Clause 11.10.2 of the Concession Agreement, the Generator agrees that the GOL shall pay directly to EGAT an amount equal to the lesser of: (i)

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the Termination Payment that the Generator owes to EGAT; and (ii) the amount of payment that the GOL is required to compensate the Generator less the amount that the Generator owes to the Lenders under the Financing Document at that time, such latter amount having been paid by the GOL to the Lenders. Under such circumstance, after EGAT duly receives from the GOL such payment referred to in this Section 17.12.2(e), the Generator shall be obligated to pay to EGAT the remaining balance of the Termination Payment on or before the Scheduled Termination Payment Date.

- (f) In the event that a Breach of Contract under the Concession Agreement occurs and the Generator is permitted in accordance with Clause 14.4 of the Concession Agreement to transfer its rights and obligations under the Concession Agreement to a third party, then EGAT shall have the first refusal right, but under no circumstances the obligation, to accept and assume the Generator's rights and obligations under the Concession Agreement and the Generator shall not transfer its rights and obligations under the Concession Agreement to any third party unless and until EGAT refuses to exercise its rights under this Section 17.12.2(f).

17.12.3 At or before the time of the transfer of ownership of the Generator Assets in accordance with Section 17.12.2(a) from the Generator to the EGAT Designated Assignee, both Parties shall for the purposes of Section 17.12.2(a) execute and deliver all instruments and take all necessary steps (including the assignment and novation of the Generator's contractual rights and obligations) as may be reasonably required for the assignment, novation or transfer of the Assigned Rights and Obligations and for fully vesting in the EGAT Designated Assignee all rights, title and interest of the Generator in and to the Generator Assets to be transferred to the EGAT Designated Assignee, including all contracts, purchase orders, guarantees, warranties, indemnities and other agreements that then remain in effect and that are necessary, appropriate or otherwise are of benefit or related to the ownership, operation, maintenance and/or repair of the Generator System; provided, however, that:

- (a) EGAT shall be under no obligation to accept the assignment of any such rights or the novation of any such obligations (other than in regard to the Concession Agreement) to the EGAT Designated Assignee if the counter party to the Generator is in default thereunder;
- (b) notwithstanding the definition of the Assigned Rights and Obligations, such rights and/or obligation that are not accepted by EGAT pursuant to Section 17.12.3(a) shall not constitute part of the Assigned Rights and Obligations; and

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- (c) such non acceptance as referred to in Section 17.12.3(a) by EGAT will not cause the Generator to be in breach of its obligations to assign all of its rights and novate all of its obligations to the EGAT Designated Assignee as required by Section 17.12.2(a).

17.12.4 To the extent that Debt remains outstanding, there shall be no set off or counterclaim against the Termination Payment in accordance with Section 17.9(b). For the avoidance of doubt, the provisions of this Section 17.12.4 shall not limit or otherwise affect the rights of a Party to subsequently claim and receive monies from the other Party:

- (a) that were due and owing at the time of the transfer and assignment, but at such time were not known or realized to be so by the Party entitled to such amounts;
- (b) as may be subsequently decided by the arbitration tribunal pursuant to any amount disputed under Section 13.2 to be due and owing, whether before or after the date of the transfer and assignment, to that Party under this Agreement; or
- (c) as may be subsequently agreed by the Parties as having been paid in error.

17.12.5 Upon the Generator Assets being acquired by the EGAT Designated Assignee pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5, all costs and expenses of effecting that acquisition as well as, in the case of Section 17.12.5(a), any costs and expenses incurred by the Generator in respect of the operation and maintenance of the Generator System during the period from the Term Termination Date until that acquisition occurs which exceed the revenue earned during that period by the Generator shall:

- (a) in the event that EGAT was obligated to acquire the Generator Assets pursuant to Sections 10.1.3 or 11.7.5, be paid for or reimbursed to the Generator by EGAT; or
- (b) in the event that EGAT elected to exercise its right to acquire the Generator Assets pursuant to Sections 10.2.3 or 11.8.5, be paid for or reimbursed to EGAT by the Generator.

17.12.6 Following the acquisition of the Generator Assets by the EGAT Designated Assignee as provided in this Section 17.12 and subject in all respects to Section 8.1.5, the Generator agrees that:

- (a) neither the Generator nor the Generator's shareholders nor any person claiming through them or either of them will have any right, title or interest in the Generator Assets;

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- (b) subject to the terms of this Agreement and any agreement applicable to any of the Generator Assets, the EGAT Designated Assignee shall be free to own, operate and otherwise deal with the Generator Assets as it thinks fit on an unencumbered basis and without any obligation to make any payment to the Generator or to the Generator's shareholders or to any contractor which is not a party to any of the Generator Assets; and
- (c) to give effect to its obligations under Section 17.12.6(b), the Generator shall, subject to the provisions of Section 17.12.5 as to the Party responsible for bearing the cost thereof:
- (i) give to the EGAT Designated Assignee physical possession and control of the Site, the Generator System and the other relevant Generator Assets to the exclusion of all others; and
- (ii) remove from the Site or procure the removal from the Site of:
- (1) all of its personnel and those contractors who are not counterparties in respect of any of the Generator Assets and their personnel; and
- (2) all surplus and unsalvageable materials and equipment (including any hazardous materials and equipment) owned by the Generator but not comprising the Generator Assets.

17.12.7 The Generator shall procure, subject to Sections 17.12.2(b) and 17.12.5, that the Generator Assets acquired by EGAT are transferred to the EGAT Designated Assignee free of any lien, charge or encumbrance except for any lien, charge or encumbrance granted to EGAT as contemplated under this Agreement.

17.12.8 The acquisition by EGAT of the Generator Assets through the EGAT Designated Assignee pursuant to this Agreement shall not in anyway constitute a release of or prejudice to or affect:

- (a) a Party's obligations to the other Party in respect of any breach of its obligations or representations or warranties under this Agreement, accruing prior to such transfer and assignment; and
- (b) a Party's rights or obligations under Section 13 (Dispute Resolution), Section 14 (Indemnity and Limitations of Liability), Section 16 (Confidentiality and Announcements), Section 17.3 (Notices) and Section 20 (Jurisdiction),

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except, in relation to Section 14.1.2, to the extent that a liability is the subject of the indemnity to be provided by the Generator under Clause 5 of the CA Assignment, Assumption and Release Agreement (as referred to in the GOL Undertaking), no claim regarding that liability shall be entitled to be made pursuant to Section 14.1.2.

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## 18. INSURANCE

### 18.1 Insurances Required

The Generator shall fully apprise EGAT of the insurance requirements proposed by the Lenders (including draft documentation thereon) and the Generator shall use its best efforts to implement recommendations on such requirements reasonably made by EGAT. The Generator shall obtain and maintain in effect such insurance policies and coverage as are required by applicable Law, the Concession Agreement, the Financing Documents and Prudent Utility Practice, including:

- (a) “Workers’ Compensation” insurance that complies with the Law of the Lao PDR;
- (b) “All Risks Property Coverage” insurance against damage to the Facility and the rest of the Generator System (on a “replacement cost” basis);
- (c) “Business Interruption” insurance; and
- (d) “Third party liability” insurance.

The Generator shall maintain throughout the Term of this Agreement the scope and type of insurance coverage as is initially required to be obtained and maintained by the Financing Documents and the Concession Agreement, provided the types of insurance and the amount thereof are reasonably acceptable to EGAT. The Generator shall not reduce the scope of such insurance nor alter or modify the endorsements thereof without the prior written consent of EGAT, such consent not to be unreasonably withheld or delayed, taking into account, among other factors, the availability of such insurance on reasonable commercial terms.

### 18.2 Endorsements

18.2.1 Subject to the provisions of Section 18.2.3, the Generator shall cause its insurers to amend its All Risks Property Coverage and any other insurance policy that has been endorsed to the Lenders at the time of the Financial Close Date with the following endorsements items:

- (a) EGAT and its officers, directors, employees and agents are additional insureds under the policy to the extent of their respective insurable interests;
- (b) the insurer waives all rights of subrogation against EGAT, its officers, directors, employees, and agents; and
- (c) notwithstanding any provision of the policy, the policy may not be cancelled, non-renewed or materially changed without the

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insurer giving thirty (30) days prior written notice to EGAT. The Generator shall promptly inform EGAT of any other changes related to the policy, together with the copy thereto, after such changes having been made.

18.2.2 EGAT hereby acknowledges that the insurance endorsed to EGAT pursuant to Section 18.2.1 may also be endorsed to the GOL by naming the GOL as an additional insured.

18.2.3 In respect of any insurances endorsed to EGAT pursuant to Section 18.2.1, provided that the Generator diligently exercises its best efforts to pursue all such claims, EGAT agrees that all claims by EGAT as a co-insured under or arising from any such insurances shall be submitted through the Generator and any payments by the insurers in respect of such claims shall be applied or caused to be applied in accordance with the requirements of Section 18.5. The Generator shall promptly provide to EGAT copies of all material correspondence between the Generator and its insurers regarding all such claims.

### 18.3 Further Requirements relating to Insurance

18.3.1 In addition to complying with the other requirements regarding the insurance set forth in this Section 18, the Generator shall place into effect, for its account, and keep so insured until the Term Termination Date, the insurance policies for the Generator System required by Section 18.1 with reputable underwriters or insurance companies of recognized standing in the international insurance market.

18.3.2 The Generator shall in relation to each insurance policy for the Generator System required by Section 18.1 promptly notify EGAT of any circumstances which give rise or might reasonably be foreseen to give rise to a claim or series of claims by the Generator under any such policy or policies for any one occurrence which in aggregate exceed US Dollars one million (USD 1,000,000).

18.3.3 The Generator shall promptly pay all premiums and any other moneys due in respect of all insurance policies for the Generator System required by Section 18.1 and, in instances of the Generator's default of payments thereunder, EGAT may (but shall not be obliged to) pay such premiums or such other amounts due (if any) on behalf of the Generator at the cost of the Generator and do all other things necessary to keep the same in full force and effect and provide to the Generator copies of receipts (or other evidence of payment) in respect of premiums payable under all insurance required to be obtained by the Generator in order to comply with the requirements of this Section 18.

18.3.4 No later than the Financial Close Date, the Generator shall deliver to EGAT in full effect:

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- (a) an agreement executed by the Generator in favor of EGAT in the form and substance set forth in Part II of Schedule 25 (the “**Insurance Assignment**”) pursuant to which the Generator will assign to EGAT, as security subordinated to the Lenders in accordance with Section 9.4.4 for its obligations under this Agreement, its benefits or interests in and over certain insurance effected from time to time pursuant to this Section 18 and, upon confirming that it has been provided the Insurance Assignment so executed by the other parties thereto, EGAT shall itself execute the Insurance Assignment;
- (b) the Subordination Agreement required to establish the priority of the respective claims of the Lenders and EGAT against the insurance proceeds and other benefits of, in and over the insurance the subject of the Insurance Assignment in accordance with the requirements of Section 9.4.4; and
- (c) all other documents that are required to be executed and delivered pursuant to the Insurance Assignment and the Subordination Agreement regarding the same under the Law of the Lao PDR and any other applicable Law for the enforceability thereof, duly executed by all the parties thereto (other than EGAT);

together with evidence in the form of the legal opinion referred to in Section 1.5.1(g) that the Insurance Assignment and the Subordination Agreement regarding the same have each been, to the extent required by the Law of the Lao PDR, duly registered with the State Assets Management Department of the Ministry of Finance of the Lao PDR and that the Generator has taken or satisfied such other acts and requirements as are required by the Law of the Lao PDR to ensure that the Insurance Assignment and the Subordination Agreement regarding the same are enforceable against the Generator and the other parties thereto.

#### **18.4 Insurance Documents required**

Promptly upon receipt thereof by the Generator, but in any event no later than ten (10) Business Days thereafter, the Generator shall deliver to EGAT two (2) copies of each of the insurance policies effected in accordance with the requirements set forth in this Section 18 and in a form reasonably acceptable to EGAT, verifying the existence of insurance coverage and endorsements from reputable underwriters or insurance companies of recognized standing in the international insurance market. The Generator shall also provide EGAT with two (2) copies of the receipts appropriate to the annual premiums in respect of the insurance coverage and endorsements.

Failure of the Generator to either: (i) obtain the insurance coverage required by this Section 18 in accordance therewith; or (ii) provide EGAT with copies



of the insurance policies or copies of receipts as required by this Section 18.4, shall in no way relieve the Generator of the insurance requirements of this Section 18 or alter the Generator's obligations and liabilities under any provision of this Agreement.

#### **18.5 Application of Proceeds**

For the Term of this Agreement, and subject to the requirements of the Financing Documents and the Subordination Agreement and any rights or remedies thereunder, the Generator shall apply any and all of the insurance proceeds that it receives regarding any damage to the Generator System pursuant to insurance obtained and maintained for the Generator System in accordance with this Section 18 toward the repair, reconstruction or replacement of the damaged portion of the Generator System. EGAT may reasonably request evidences of the Generator's compliance with the requirement hereof.

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**19. GOVERNING LAW**

This Agreement shall be governed by and construed in all respects in accordance with the laws of Thailand regardless of any applicable principles existing under Thai laws regarding conflicts of laws.

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**20. JURISDICTION****20.1 Waiver of Immunity**

To the extent that either Party may be or hereafter becomes entitled, in any jurisdiction, to claim for itself or its property, assets or revenues immunity (whether by reason of sovereignty or otherwise) in respect of its obligations under this Agreement from service of process, suit, jurisdiction of any court, judgment, order, award, attachment (before or after judgment or award), set off, execution of a judgment or other legal process, and to the extent that in any such jurisdiction there may be attributed to either Party or to any of such Party's property, assets or revenues such an immunity (whether or not claimed), each Party hereby irrevocably agrees not to claim and hereby irrevocably waives such immunity to the fullest extent permitted by Law.

**20.2 Proceeding**

For the avoidance of doubt, nothing contained in the foregoing provisions of this Section shall permit either Party to commence proceedings in the courts of any jurisdiction in respect of any dispute arising under or in connection with this Agreement where this Agreement provides for such dispute to be referred to arbitration and such proceedings would not otherwise be permitted under Section 13.3.

**20.3 Submission to Jurisdiction**

For the purposes of obtaining enforcement of any arbitration award of an arbitration tribunal duly appointed pursuant to this Agreement to resolve a dispute between the Parties and for purposes of obtaining the type of injunctive relief permitted to be sought by the Parties pursuant to Section 13.3(a), and solely for the foregoing limited purposes, each Party irrevocably waives any objection which it may have now or hereafter to the bringing of proceedings in any court and any claim that any such proceedings have been brought in an inconvenient forum and, solely for the foregoing limited purposes, irrevocably submits to the non-exclusive jurisdiction of such court; provided, further, that notwithstanding the foregoing limited submission of each Party to the jurisdiction of such court, nothing herein constitutes on the part of either Party an agreement by or an authorization for any court to resolve such dispute.

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**IN WITNESS WHEREOF** the Parties have caused this Agreement to be executed at Vientiane, the Lao PDR by their respective duly authorized representatives as of the date first above written.

SIGNED by  
for and on behalf of  
**ELECTRICITY GENERATING AUTHORITY OF THAILAND**  
by its duly authorized representative

(Mr. Sutat Patmasiriwat)  
Governor

in the presence of:-

(Mr. )  
Deputy Governor – Transmission System

SIGNED by  
for and on behalf of  
[ ]  
by its duly authorized representatives

( )  
[ ]

in the presence of:-

( )  
[ ]

D/C.



**XAYABURI POWER**

YOUR SENSE OF ENERGY

# **POWER PURCHASE AGREEMENT**

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## **XAYABURI HYDROELECTRIC POWER PROJECT**

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BETWEEN

**ELECTRICITY GENERATING AUTHORITY OF THAILAND**

AND

**XAYABURI POWER COMPANY LIMITED**

**Dated [.....]**

**Volume Two: Schedules**

**Schedule 1****CONTRACTED SUPPLY CONDITIONS****Part I: Basic Parameters in respect of Supply****1 Generating Capacity of the Facility with Seven Generating Units**

The generating capacity of the Facility, being referred to at the Delivery Point, shall be a function of: (i) the Operating Water Head; (ii) the number of Generating Units that are in operation; and (iii) the number of transmission circuits between the Xayaburi Switchyard and the Loei 2 Substation that are in service. Unless otherwise specified, all references to generating capacity and/or electrical energy in this Schedule 1 shall be understood as referring to such relevant values at the Delivery Point, under the condition that both transmission circuits between the Xayaburi Switchyard and the Loei 2 Substation are in service.

**1.1 Contracted Capacity**

The “**Contracted Capacity**” for a given Operating Water Head shall be defined as the contractual value of the total generating capacity of the Facility (comprising all seven (7) Generating Units) at the Delivery Point at such Operating Water Head, under the condition that both transmission circuits between the Xayaburi Switchyard and the Loei 2 Substation are in service, being equal to the value for such Operating Water Head either provided in Table 1.1.1 of Part III of Schedule 1 or determined by linear interpolation based upon the values provided therein.

**1.2 Registered Capacity**

The “**Registered Capacity**” for a given Operating Water Head shall be defined as the contractual value of the total generating capacity of the Facility (comprising all seven (7) Generating Units) at the Delivery Point at such Operating Water Head effective, respectively, from the Commercial Operation Date or the date of completion of any subsequent Annual Testing or Additional Testing or reassessment of Registered Stability Limit, as applicable, under the condition that both transmission circuits between the Xayaburi Switchyard and the Loei 2 Substation are in service.

The value of the Registered Capacity for any Operating Water Head shall be as established in accordance with Paragraph 5 of Part IV of Schedule 17 pursuant to the relevant Commissioning Testing, Annual Testing or Additional Testing or reassessment of Registered Stability Limit, as applicable, and either provided in Table 1.3.1 of Part III of Schedule 1 or determined by linear interpolation based upon the values provided therein. Such Registered Capacity shall be effective until the next Annual Testing or Additional Testing or reassessment of Registered Stability Limit, as applicable, whereupon a revised Registered Capacity is established pursuant to such Annual Testing or Additional Testing or reassessment of Registered Stability Limit.

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## 2 Generating Capacity of the Facility with less than Seven Generating Units

When in any particular context that involves the generating capacity of less than Seven (7) Generating Units, including such determination of generating capacity during the Commissioning Testing or pursuant to a Generator System Outage, the concepts of Contracted Capacity and Registered Capacity shall be extended to such number of Generating Units and the respective corresponding terms shall be defined as the “N Unit Contracted Capacity” and the “N Unit Registered Capacity”, respectively, where N is any of one, two, three, four, five and six. The values of N Unit Contracted Capacity and N Unit Registered Capacity, which stands for any of one, two, three, four, five and six, are provided in Tables 1.1.1 and 1.3.1 of Part III of Schedule 1, respectively.

In the event that the reference in this Agreement to any of Contracted Capacity and Registered Capacity has not specified the number of Generating Units in association therewith, the relevant reference shall be construed to be referring to either seven (7) Generating Units or the actual number of Generating Units that are Available at the relevant time, as the context may require.

## 3 Determination of Annual Supply Targets in respect of Section 4.4.1(b)(ii)

In respect of each Committed Energy Component, the Annual Supply Target for any Contract Year in respect of the case provided in Section 4.4.1(b)(ii) shall be determined as follows:

Let: N be the subscript that characterizes Generating Unit N and varies from 1 to 7;

j be the subscript that characterizes a given Contract Year j;

CY<sub>Nj</sub> be, in respect of the Contract Year j and Generating Unit N that has been Commissioned, the number of days comprised in Contract Year j, net of the number of days comprised in that Contract Year j during which a Force Majeure affects either or both of the Parties;

AnPESupTar<sub>j</sub> be the Annual Supply Target for Primary Energy for all Commissioned Units in respect of the Contract Year j (in GWh); and

AnSESupTar<sub>j</sub> be the Annual Supply Target for Secondary Energy for all Commissioned Units in respect of the Contract Year j (in GWh);

Then:  $AnPESupTar_j = 4,299 \times (CY_{1j} + CY_{2j} + CY_{3j} + CY_{4j} + CY_{5j} + CY_{6j} + CY_{7j}) / (7 \times 365)$

$AnSESupTar_j = 1,410 \times (CY_{1j} + CY_{2j} + CY_{3j} + CY_{4j} + CY_{5j} + CY_{6j} + CY_{7j}) / (7 \times 365)$

## 4 Determination of Settled Energy Limit

In respect of each Committed Energy Component, the Settled Energy Limit provided in Section 4.4.1(a) shall be determined as follows:

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**(a) Determination of Settled Energy Limit One**

Let:  $AnPESupTar_j$  be the Annual Supply Target for Primary Energy for all Commissioned Units in respect of a given Contract Year  $j$  (in GWh) as defined in Section 4.4.1(b);

$AnSESupTar_j$  be the Annual Supply Target for Secondary Energy for all Commissioned Units in respect of a given Contract Year  $j$  (in GWh) as defined in Section 4.4.1(b);

$PESetLim1$  be the Settled Energy Limit One for Primary Energy to be supplied from all Commissioned Units in respect of the period comprising Relevant Period 1 and the Relevant Period 2 (in GWh); and

$SESetLim1$  be the Settled Energy Limit One for Secondary Energy to be supplied from all Commissioned Units in respect of the period comprising Relevant Period 1 and the Relevant Period 2 (in GWh);

$$\text{Then: } PEs\text{SetLim1} = \sum AnPESupTar_j$$

$$SESetLim1 = \sum AnSESupTar_j$$

The two summations are taken for all Contract Years  $j$  comprised in the period comprising Relevant Period 1 and the Relevant Period 2.

**(b) Determination of Settled Energy Limit Two**

Let:  $AnPESupTar_j$  be the Annual Supply Target for Primary Energy for all Commissioned Units in respect of a given Contract Year  $j$  (in GWh) as defined in Section 4.4.1(b);

$AnSESupTar_j$  be the Annual Supply Target for Secondary Energy for all Commissioned Units in respect of a given Contract Year  $j$  (in GWh) as defined in Section 4.4.1(b);

$PESetLim2$  be the Settled Energy Limit Two for Primary Energy to be supplied from all Commissioned Units in respect of the period comprising Relevant Period 3 and the Relevant Period 4 (in GWh); and

$SESetLim2$  be the Settled Energy Limit Two for Secondary Energy to be supplied from all Commissioned Units in respect of the period comprising Relevant Period 3 and the Relevant Period 4 (in GWh);

$$\text{Then: } PEs\text{SetLim2} = \sum AnPESupTar_j$$

$$SESetLim2 = \sum AnSESupTar_j$$

The two summations are taken for all Contract Years  $j$  comprised in the period comprising Relevant Period 3 and the Relevant Period 4.

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**(c) Determination of Settled Energy Limit Three**

Let:  $AnPESupTar_j$  be the Annual Supply Target for Primary Energy for all Commissioned Units in respect of a given Contract Year  $j$  (in GWh) as defined in Section 4.4.1(b);

$AnSESupTar_j$  be the Annual Supply Target for Secondary Energy for all Commissioned Units in respect of a given Contract Year  $j$  (in GWh) as defined in Section 4.4.1(b);

$PESetLim3$  be the Settled Energy Limit Three for Primary Energy to be supplied from all Commissioned Units in respect of the Relevant Period 5 and the Relevant Period 6 (in GWh); and

$SESetLim3$  be the Settled Energy Limit Three for Secondary Energy to be supplied from all Commissioned Units in respect of the Relevant Period 5 and the Relevant Period 6 (in GWh);

$$\text{Then: } PSEtLim3 = \sum AnPESupTar_j$$

$$SESetLim3 = \sum AnSESupTar_j$$

The two summations are taken for all Contract Years  $j$  comprised in the Relevant Period 5 and the Relevant Period 6.

**5 Guarantee of Minimum Availability and Delivery****5.1 Guarantee of Availability during the PE Period****5.1.1 Minimum PE Guarantee**

Subject to Paragraph 5.1.2 of Part I of Schedule 1, the Generator shall declare and provide to EGAT the following PE Availability:

- (i) in each month after the Commercial Operation Date, as a minimum an amount equal to the Registered Capacity in respect of the total number of Commissioned Units for each Weekday comprised in the given month times the lesser of: (1) eight (8) hours; and (2) sixteen (16) hours less the number of Equivalent Hours that is associated with a Generator Planned Outage, a Generator Affected Force Majeure Outage or an Exceptional Outage occurring in the PE Period of the relevant Weekday, excluding in each case such hours comprised in the relevant Weekday during which the Operating Water Head is less than 21 meters and aggregated for all Weekdays comprised in that month (the "**Monthly Minimum PE Guarantee**"); and
- (ii) in each Contract Year, as a minimum an amount equal to the Registered Capacity for each Weekday comprised in the given

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Contract Year times the lesser of: (1) ten (10) hours; and (2) sixteen (16) hours less the number of Equivalent Hours that is associated with a Generator Planned Outage, a Generator Affected Force Majeure Outage or an Exceptional Outage occurring in the PE Period of the relevant Weekday, excluding in each case such hours comprised in the relevant Weekday during which the Operating Water Head is less than 21 meters and aggregated for all Weekdays comprised in that Contract Year (the “**Annual Minimum PE Guarantee**”).

The “**Equivalent Hours**” referred to in Paragraphs 5.1.1(i) and 5.1.1(ii) above shall be determined such that the amount of Unavailability calculated on the basis of such Equivalent Hours and the total number of Commissioned Units shall be equal to the actual Unavailability in respect of the PE Period of such relevant Weekday that is associated with such Generator Planned Outage or such Generator Affected Force Majeure Outage, as applicable.

Subject to Paragraph 5.1.2 of Part I of Schedule 1, the Generator shall be liable to pay liquidated damages to EGAT:

- (1) if it fails to Declare and make Available an amount of PE Availability for a particular Contract Year that is equal to or greater than the Annual Minimum PE Guarantee for such Contract Year, in accordance with Section 9.6.5; or
- (2) if it fails to Declare and make Available an amount of PE Availability for a particular month comprised in an Contract Year that is equal to or greater than the Monthly Minimum PE Guarantee for such month, in accordance with Section 9.6.6.

#### 5.1.2 Waiver for Drought Year

Generator shall be entitled to declare, prior to the month when Generator’s liability to pay liquidated damages in association with its failure to Declare and make Available PE Availability equal to or greater than the relevant Monthly Minimum PE Guarantee or Annual Minimum PE Guarantee arises:

- (a) one drought year during the period from the Commercial Operation Date until the end of the first thirteen (13) Contract Years; and
- (b) another drought year during the period thereafter,

during which Generator shall not have any liability for paying liquidated damages to EGAT in respect of Monthly Minimum PE

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Guarantee and Annual Minimum PE Guarantee for such drought year in accordance with Sections 9.6.5 and 9.6.6, respectively.

## 5.2 Rules regarding Generator Maintenance Outages

### 5.2.1 Generator Planned Outages and Generator Maintenance Outages

All Generator Planned Outages shall be included in both:

- (1) (i) the relevant Initial First Period Planned Outage Program; or
  - (ii) the relevant Initial Second Period Planned Outage Program; or
  - (iii) the relevant Annual Planned Outage Program;
- as applicable; and
- (2) the relevant Weekly Declaration;

as provided in Paragraphs 1.1 and 1.2 of Part I of Schedule 3, respectively.

Generator shall schedule all Generator Planned Outages and Generator Maintenance Outages such that:

- (a) other than when the duration of such Generator Planned Outage or Generator Maintenance Outage exceeds thirty-two (32) hours, any Generator Planned Outage or Generator Maintenance Outage shall not occur during the PE Period;
- (b) all Generator Planned Outages and Generator Maintenance Outages each of which exceeds thirty-two (32) hours shall be performed only during the six-month period between December and June; and
- (c) during any period after the Commercial Operation Date, other than either: (i) associated with an Exceptional Outage; or (ii) as required by a Maintenance Type as shown in the Maintenance Plan provided in Table 20.3 of Part I of Schedule 20, there shall not be two (2) or more Generator Planned Outages or Generator Maintenance Outages occurring simultaneously.

Part I of Schedule 20 contains the Maintenance Plan for the Generator Planned Outages throughout the Term, indicating the number, timing and duration in respect of each Maintenance Type comprised therein.

### 5.2.2 Allowances for Generator Maintenance Outage

With respect to Section 9.6.4, the allowances for Generator

Maintenance Outages shall be defined as follows:

- (a) In respect of the Initial First Period

The Initial First Period Maintenance Outage Allowance shall be equal to two hundred and fifty (250) GWh.

- (b) In respect of the Initial Second Period

The Initial Second Period Maintenance Outage Allowance shall be equal to one hundred and forty (140) GWh multiplied by a fraction the numerator of which is equal to the number of days in the Initial Second Period and the denominator of which is equal to three hundred and sixty-five (365).

- (c) In respect of all Contract Years after the Initial Second Period

The Annual Maintenance Outage Allowance for each Contract Year from and after the Initial Second Period shall be equal to one hundred and forty (140) GWh multiplied by a fraction the numerator of which is equal to the number of days in such Contract Year and the denominator of which is equal to three hundred and sixty-five (365).

### 5.2.3 Exceptional Outage

The Generator shall be entitled to claim once an Exceptional Outage, as a result of the occurrence of an exceptional event as qualified in Paragraph 2 of Part I of Schedule 20.

### 5.2.4 Line Maintenance Outage

The Parties shall use their best efforts to coordinate for the occurrence of Line Maintenance Outages and to schedule such Line Maintenance Outages to occur during the SE periods and in a manner that will minimize their impact on both Parties.

In respect of any Coordinated Line Maintenance Outage provided in Schedule 20:

- (i) Generator shall neither incur nor be liable for any liquidated damages due to any Machine Outage associated therewith; and
- (ii) in the event that Weekly Dispatch Shortfall Energy occurs in the relevant week, such Weekly Dispatch Shortfall Energy, as determined on the basis that such Coordinated Line Maintenance Outage has not been taken into account in the determination of Final Declaration, shall be deducted by an

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amount equal to the lesser of: (aa) the Unavailability associated with the actual duration of such Coordinated Line Maintenance Outages; and (bb) the amount of Weekly Dispatch Shortfall Energy that occurs in such week prior to such deduction, details of such deduction being in accordance with Paragraph 3.2 of Part II of Schedule 3.

## **6 Contracted Operating Characteristics**

In satisfying its obligation to provide power and electrical energy to the EGAT System, Generator shall Declare and make Available the Registered Operating Characteristics to EGAT at such contractual value or within the respective contractual range set out in Schedule 1, as applicable. Subject to the relevant Declared Operating Characteristics, EGAT shall have the right and discretion to Dispatch the Facility at any time based on such Registered Operating Characteristics.

If either:

- (a) the Generator fails to provide the level of generating capacity or electrical energy that it has Declared or contracted to EGAT; or
- (b) the achievable value of any Registered Operating Characteristic deteriorates when compared to the respective Threshold Operating Characteristic,

then the Generator shall be liable to pay liquidated damages to EGAT in accordance with Section 9.6.

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**Part II: Determination in respect of Stability Limit****1 Concept and conditions****1.1 Transmission Line Stability Limit**

The “**Transmission Line Stability Limit**” in respect of the Generator Transmission Line shall be defined for maximum generating capacity (in MW) under each of all possible operating conditions and/or load situation up to the Delivery Point via the Generator Transmission Line in delivering electrical energy to the EGAT System, taking into account the actual values of the relevant stability parameters referred to at the Delivery Point, before the tripping of a transmission circuit of the Generator Transmission Line due to the occurrence of a three-phase short-circuit on such transmission circuit at the Xayaburi Switchyard end, for which transient stability of the interconnected system is maintained when such three-phase short-circuit is cleared within eighty (80) ms (for tripping of a transmission circuit of the Generator Transmission Line).

The main operating conditions of the interconnected system before the occurrence of the three-phase short-circuit referred to above shall be as follows:

- all seven (7) Generating Units are in operation;
- both transmission circuits of the Generator Transmission Line are in operation;
- the interconnected system comprising the EGAT System and Generator System is in steady-state condition;
- the system frequency of the interconnected system is at the rated frequency; and
- the voltage at the Xayaburi Switchyard is 500 kV (1.00 per unit).

The Transmission Line Stability Limit shall, for calculation purposes, first be determined at the Loei 2 Substation. It shall then be calculated by adding an allowance for line losses between the Loei 2 Substation and the Delivery Point, estimated by EGAT taking into account the actual parameters of the interconnected system at the time of determination.

**1.2 Contracted Stability Limit**

The “**Contracted Stability Limit**” in respect of the Xayaburi Hydroelectric Power Project for the cases where:

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- (a) all the relevant parameters of the Generator System are better than the corresponding value of the Generator Reference Stability Data; or
- (b) the Generator Transmission Line is energized at 500 kV, provided that the fault clearing time for any three-phase short-circuit is no longer than eighty (80) ms,

shall be equal to one thousand two hundred and twenty (1,220) MW.

### 1.3 Registered Stability Limit

At any particular time, the “**Registered Stability Limit**” in respect of the Xayaburi Hydroelectric Power Project shall be the Transmission Line Stability Limit, which shall be effective and applicable for the purpose of this Agreement until the time of the completion of the next Annual Testing or Additional Testing or reassessment of Registered Stability Limit, as applicable.

## 2 Determination of Registered Stability Limit

- (a) The determination of the Registered Stability Limit shall be as follows:
  - (i) the Registered Stability Limit shall be reassessed whenever there is a major change of the interconnected system that is expected to affect the Transmission Line Stability Limit;
  - (ii) in the event that no reassessment of Registered Stability Limit is requested by EGAT upon the completion of Commissioning Testing, the Registered Stability Limit shall be equal to the Contracted Stability Limit; and
  - (iii) in the event that either Party requests the reassessment of the Registered Stability Limit, EGAT shall perform the necessary simulation to determine the Registered Stability Limit, and the Generator shall be allowed to attend and witness such reassessment and all such calculations.
- (b) Either Party may at any time request the reassessment of the Registered Stability Limit, provided that, other than such determination required by a major change of the interconnected system referred to in Paragraph 2(a)(i) above, each Party shall not make such request more than once in each Contract Year.
- (c) Each Party shall bear its own cost of attending and witnessing any reassessment.
- (d) In respect of each reassessment that is requested by the Generator, the Generator shall compensate EGAT for the performance of such reassessment by paying EGAT a lump sum amount equal to one hundred thousand (100,000) Thai Baht.

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### 3 **Description of the Generator Reference Stability Data**

#### 3.1 **Purpose**

Paragraphs 4 and 5 of this Part I of Schedule 1 contain the main parameters comprised in the Generator Reference Stability Data. In the event that the latest values of such relevant parameters that result upon completion of the Commissioning Testing, the Additional Testing or the Annual Testing, as applicable, deviate from such Generator Reference Stability Data, either Party shall be entitled to request a reassessment of the Registered Stability Limit.

#### 3.2 **Content**

The major parameters and models in respect of the Generator Reference Stability Data defined in Paragraphs 4 and 5 of Part II of Schedule 1 shall include (all references are referred to this Part II of Schedule 1):

- (i) the Salient Pole Generator Model set out in Paragraph 4.1;
- (ii) the Static Exciter Model set out in Paragraph 4.2;
- (iii) the IEEE Stabilizing Model set out in Paragraph 4.3;
- (iv) the Hydro Turbine Governor Model set out in Paragraph 4.4; and
- (v) the values of such parameters in respect of the Generating Units, the Generator Transformers and the Generator Transmission Line as listed in and referred to in Paragraph 5.

#### 3.3 **Units**

Except when explicitly stated otherwise, the respective Generator Reference Stability Data set out in Paragraphs 4 to 5 shall be expressed in the following units:

<b>Parameters</b>	<b>Unit</b>
Rated Power	MVA
Inertia	MW.s/MVA
Reactances (all)	p.u. machine MVA based (200 MVA)
Time constants (all)	s
Excitation ceiling voltage	p.u.

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**4 Models related to the determination of Registered Stability Limit**

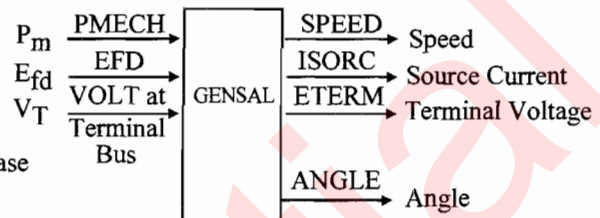
**4.1 Salient Pole Generator Model**

**GENSAL**  
**Salient Pole Generator Model (Quadratic Saturation on d-Axis)**

This model is located at system bus # \_\_\_\_\_ IBUS,  
machine # \_\_\_\_\_ I.

This model uses CONs starting with # \_\_\_\_\_ J,  
and STATEs starting with # \_\_\_\_\_ K.

The machine MVA is 200 for each unit on 100 MVA base  
ZSORCE for this machine is 0.0 +j 0.22 p.u. on  
the above MVA base.



CONs	#	Value	Description
J		7.7	$T'_{do}$ (>0) (sec)
J+1		0.08	$T''_{do}$ (>0) (sec)
J+2		0.12	$T''_{qo}$ (>0) (sec)
J+3		3.96	Inertia, H
J+4		0.0	Speed damping, D
J+5		0.95	$X_d$
J+6		0.70	$X_q$
J+7		0.38	$X'_d$
J+8		0.31	$X''_d = X''_q$
J+9		0.21	$X_1$
J+10		0.03	S(1.0)
J+11		0.25	S(1.2)

STATEs	#	Description
K		$E'_q$
K+1		$\psi_{kd}$
K+2		$\psi''_q$
K+3		$\Delta$ speed (pu)
K+4		Angle (radians)

$X_d, X_q, X'_d, X''_d, X''_q, X_1, H,$  and  $D$  are in p.u., machine MVA base.

$X''_q$  must be equal to  $X''_d$ .

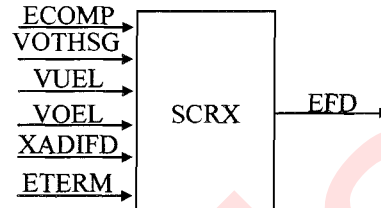
IBUS, 'GENSAL', I,  $T'_{do}, T''_{do}, T''_{qo}, H, D, X_d, X_q, X'_d, X''_d, X_1, S(1.0), S(1.2)/$

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4.2 Static Exciter Model

SCRX  
Bus Fed or Solid Fed Static Exciter

This model is located at system bus # \_\_\_\_\_ IBUS,  
machine # \_\_\_\_\_ I.  
This model uses CONs starting with # \_\_\_\_\_ J,  
and STATEs starting with # \_\_\_\_\_ K.



CONs	#	Value	Description
J		0.15	$T_A/T_B$
J+1		10.0	$T_B (>0)$ (sec)
J+2		200	K
J+3		0.04	$T_E$ (sec)
J+4		0.0	$E_{MIN}$ (pu on EFD base)
J+5		4.0	$E_{MAX}$ (pu on EFD base)
J+6		0	$C_{SWITCH}$
J+7		0	$r_c/r_{fd}$

STATEs	#	Description
K		First integrator
K+1		Second integrator

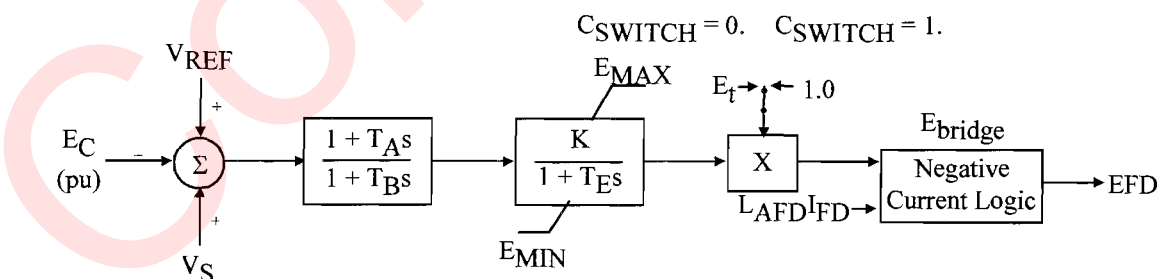
Set  $C_{SWITCH} = 0$  for bus fed.

Set  $C_{SWITCH} = 1$ . for solid fed.

Set  $CON(J+7) = 0$  for exciter with negative field current capability.

Set  $CON(J+7) > 0$  for exciter without negative field current capability. (Typical  $CON(J+7) = 10$ .)

IBUS, 'SCRX', I,  $T_A/T_B$ ,  $T_B$ , K,  $T_E$ ,  $E_{MIN}$ ,  $E_{MAX}$ ,  $C_{SWITCH}$ ,  $r_c/r_{fd}$



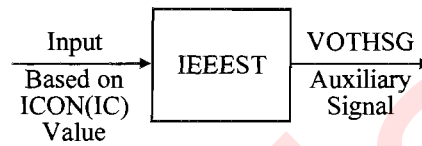
$V_S = V_{OTHSG} + V_{UEL} + V_{OEL}$

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**4.3 IEEE Stabilizing Model**

**IEEEEST  
IEEE Stabilizing Model**

This model is located at system bus # \_\_\_\_\_ IBUS,  
 machine # \_\_\_\_\_ I.  
 This model uses CONs starting with # \_\_\_\_\_ J,  
 and STATES starting with # \_\_\_\_\_ K,  
 and VARs starting with # \_\_\_\_\_ L,  
 and ICONs starting with # \_\_\_\_\_ IC.



ICONs	#	Value	Description
IC		3	ICS, stabilizer input code: 1 - rotor speed deviation (pu) 2 - bus frequency deviation (pu) 3 - generator electrical power on MBASE base (pu) 4 - generator accelerating power (pu) 5 - bus voltage (pu) 6 - derivative of pu bus voltage
IC+1		0	IB, remote bus number 2, 5, 6

STATES	#	Description
K	-	1 <sup>st</sup> filter integration
K+1	-	2 <sup>nd</sup> filter integration
K+2	-	3 <sup>rd</sup> filter integration
K+3	-	4 <sup>th</sup> filter integration
K+4		T <sub>1</sub> /T <sub>2</sub> lead-lag integrator
K+5		T <sub>3</sub> /T <sub>4</sub> lead-lag integrator
K+6		Last integer

Note: ICON(IC+1) may be nonzero only when ICON(IC) is 2, 5, or 6.  
 If ICON(IC+1) is zero, the terminal quantity is used.

VARs	#	Description
L		Memory
L+1		Derivative of pu bus voltage

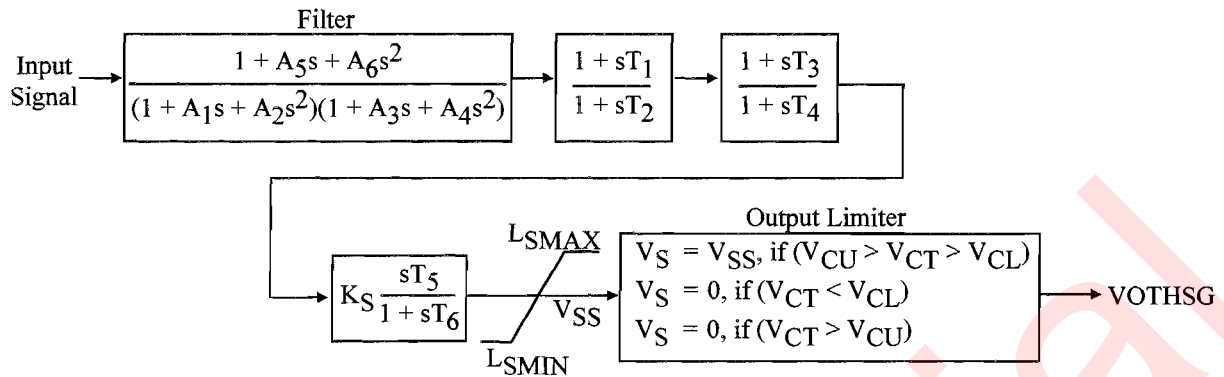
CONs	#	Value	Description
J		0	A <sub>1</sub>
J+1		0	A <sub>2</sub>
J+2		0	A <sub>3</sub>
J+3		0	A <sub>4</sub>
J+4		0	A <sub>5</sub>
J+5		0	A <sub>6</sub>
J+6		0.06	T <sub>1</sub> (sec)
J+7		0.18	T <sub>2</sub> (sec)
J+8		0.06	T <sub>3</sub> (sec)
J+9		0.18	T <sub>4</sub> (sec)
J+10		5.0	T <sub>5</sub> (sec)*
J+11		5.0	T <sub>6</sub> (>0) (sec)
J+12		-0.75	K <sub>S</sub>
J+13		0.1	L <sub>S</sub> MAX
J+14		-0.1	L <sub>S</sub> MIN
J+15		0.0	V <sub>CU</sub> (pu) (if equal zero, ignored)
J+16		0.0	V <sub>CL</sub> (pu) (if equal zero, ignored.)

\* If T<sub>5</sub> equals 0., sT<sub>5</sub> will equal 1.0.

IBUS, 'IEEEEST', I, ICS, IB, A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub>, A<sub>4</sub>, A<sub>5</sub>, A<sub>6</sub>, T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>, T<sub>4</sub>, T<sub>5</sub>, T<sub>6</sub>, K<sub>S</sub>, L<sub>S</sub>MAX, L<sub>S</sub>MIN, V<sub>CU</sub>, V<sub>CL</sub>/

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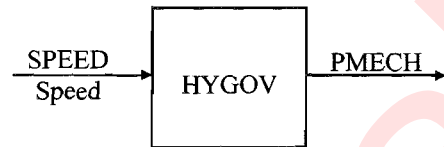
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### 4.4 Hydro Turbine Governor Model

#### HYGOV Hydro Turbine-Governor

This model is located at system bus # \_\_\_ IBUS,  
machine # \_\_\_ I.

This model uses CONs starting with # \_\_\_ J,  
and STATES starting with # \_\_\_ K,  
and VARs starting with # \_\_\_ L.

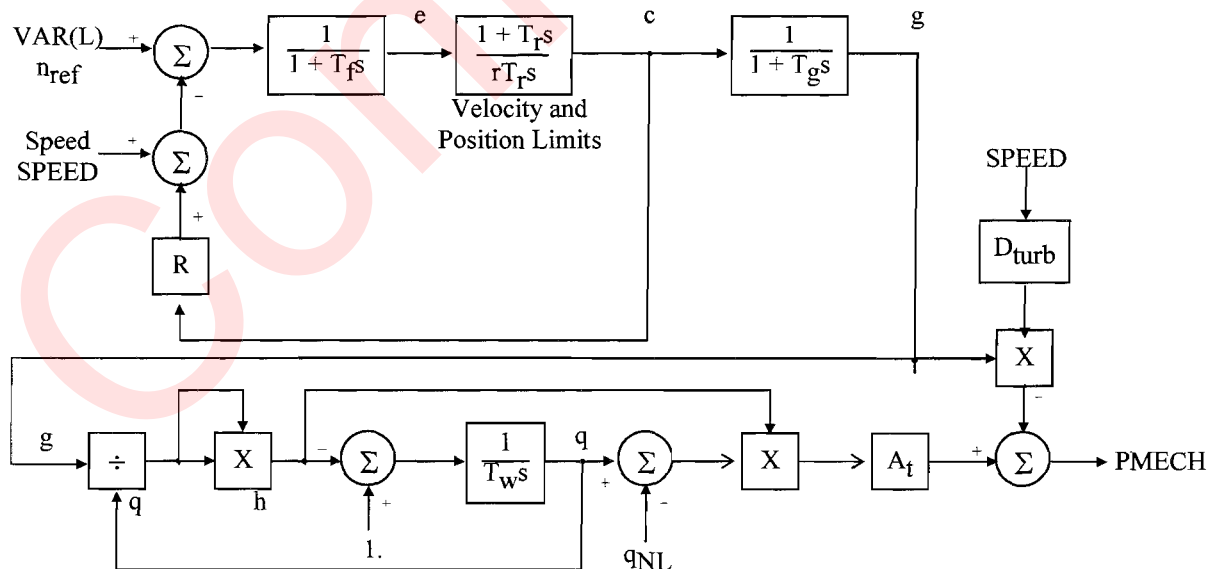


CONs	#	Value	Description
J		0.04	R, permanent droop
J+1		0.35	r, temporary droop
J+2		20	T <sub>r</sub> (>0) governor time constant
J+3		0.05	T <sub>f</sub> (>0) filter time constant
J+4		0.5	T <sub>g</sub> (>0) servo time constant
J+5		0.083	± VELM, gate velocity limit
J+6		1.0	G <sub>MAX</sub> , maximum gate limit
J+7		0.0	G <sub>MIN</sub> , minimum gate limit
J+8		0.92	T <sub>w</sub> (>0) water time constant
J+9		1.11	A <sub>t</sub> , turbine gain
J+10		0.5	D <sub>turb</sub> , turbine damping
J+11		0.1	q <sub>NL</sub> , no load flow

STATES	#	Description
K		e, filter output
K+1		c, desired gate
K+2		g, gate opening
K+3		q, turbine flow

VARs	#	Description
L		Speed reference
L+1		h, turbine head

IBUS, 'HYGOV', I, R, r, T<sub>r</sub>, T<sub>f</sub>, T<sub>g</sub>, VELM, G<sub>MAX</sub>, G<sub>MIN</sub>, T<sub>w</sub>, A<sub>t</sub>, D<sub>turb</sub>, q<sub>NL</sub>



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**5 The Generating Reference Stability Data in respect of the Generating Units, the Generator Transformers and the Generator Transmission Line**

The Generator Reference Stability Data in respect of the Generating Units, the Generator Transformers and the Generator Transmission Line shall include:

- (i) the nominal capacity at the stator terminals in respect of each Generating Unit as set out in Paragraph 1.1 of Part II of Schedule 11;
- (ii) the power factor in respect of each Generating Units as set out in Paragraph 2 of Part III of Schedule 1;
- (iii) the nominal capacity in respect of each Generator Transformer as set out in Paragraph 1.2 of Part II of Schedule 11;
- (iv) the short circuit reactance in respect of each Generator Transformer as set out in Paragraph 6.1 (b) of Part III of Schedule 11;
- (v) the approximate length of each transmission circuit of such portion of the Generator Transmission Line between the Xayaburi Switchyard and the Delivery Point as set out in Paragraph 2.7 of Part I of Schedule 11;
- (vi) the resistance of each transmission circuit of such portion of the Generator Transmission Line between the Xayaburi Switchyard and the Delivery Point, being equal to 0.018505 Ohm/km;
- (vii) the reactance of each transmission circuit of such portion of the Generator Transmission Line between the Xayaburi Switchyard and the Delivery Point, being equal to 0.266998 Ohm/km; and
- (viii) the susceptance of each transmission circuit of such portion of the Generator Transmission Line between the Xayaburi Switchyard and the Delivery Point, being equal to 4.32987  $\mu$ S/km.

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### **Part III: Contracted Operating Characteristics**

Part III of this Schedule 1 sets out the Contracted Operating Characteristics in respect of the Facility and each Generating Unit.

In satisfying its obligation to provide power and electrical energy to the EGAT System, the Generator shall Declare and make Available the Contracted Operating Characteristics to EGAT at such contractual value or within the respective contractual range set out in Schedule 1, as applicable. Subject to the relevant Declared Operating Characteristics, EGAT shall have the right and discretion to Dispatch the Facility at any time based on such Contracted Operating Characteristics.

Testing for the verification of such Operating Characteristics shall be in accordance with Schedule 17 - Testing and Commissioning. Upon the completion of such Commissioning Testing, Annual Testing or Additional Testing or reassessment of Registered Stability Limit, as applicable, the corresponding values resulting therefrom shall be defined as the relevant "Registered Operating Characteristics" and shall, where the context requires, include the Registered Capacity.

The Generator shall use its best effort to design and procure the relevant components of the Generator System, including the Generating Units, the Generator Transformers, in order to achieve the Contracted Operating Characteristics as contained in this Part III of Schedule 1. Failure to achieve any Contracted Operating Characteristics as contained in Part III of Schedule 1 (except Paragraph 8 of Part III of this Schedule 1) shall be addressed in accordance with the relevant provisions of Section 9, Part II of Schedule 1 and Section 10. If any of the Contracted Operating Characteristics set out in Paragraph 8 of Part III of this Schedule 1 is not achieved, the Parties shall discuss in good faith any necessary adjustments to this Agreement relating thereto.

#### **1 Active Power Capability in respect of the Facility and each Generating Unit**

The active power capability (in MW) that a given Generating Unit is providing, referred to at the respective Unit Metering Point, shall be defined as the "Unit Active Power" of such Generating Unit.

For the avoidance of doubt,

- (i) the application of Tables 1.3.1, 1.4.1 and 1.4.2 for the purpose of operation shall not take into account any effect of voltage, power factor and frequency at the time of carrying out such operation; and
- (ii) all values in Tables 1.3.1, 1.4.1 and 1.4.2 are generating capacity that is Available for the EGAT System, being referred to at either the Delivery Point or the Unit Metering Point, as appropriate, net of any power that Generator may supply to its auxiliary systems.

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### 1.1 Contracted Capacity Tables

Table 1.1.1 (the “**Contracted Capacity Table**”) sets out, for the case where both transmission circuits of the Transmission Line are in operation, the Contracted Capacity and the N Unit Contracted Capacity, as defined in Part I of Schedule 1, at the Delivery Point for various Operating Water Head and number of Generating Units. (For the purpose of determining the Contracted Capacity for any intermediate Operating Water Head that has not been expressly provided in Table 1.1.1, linear interpolation shall be performed on the basis of such values for the two rows of such Table 1.1.1 that are immediately lower and immediately higher than such intermediate Operating Water Head. For such purpose of interpolation, the associated Contracted Capacity shall be considered as an additional row of Table 1.1.1.)

Such values of Contracted Capacity and N Unit Contracted Capacity in Table 1.1.1 are based on the following conditions:

- nominal voltage at the Xayaburi Switchyard;
- 1.0 power factor at the Generator Metering Points; and
- nominal frequency on the EGAT System.

### 1.2 Contracted Unit Capacity Tables

Tables 1.2.1 and 1.2.2 (the “**Contracted Unit Maximum Capacity Table**” and the “**Contracted Unit Minimum Capacity Table**”, respectively) set out the maximum values and the minimum values of the unit generating capacity at the respective Unit Metering Point for various Operating Water Head (the “**Contracted Unit Maximum Capacity**” and the “**Contracted Unit Minimum Capacity**”, respectively), in terms of the number of Generating Units that are in operation and under the same operating conditions regarding voltage, power factor and frequency as set out in the above paragraph. (For the purpose of determining the Contracted Unit Maximum Capacity for any intermediate Operating Water Head that has not been expressly provided in Table 1.2.1 or the Contracted Unit Minimum Capacity for any intermediate Operating Water Head that has not been expressly provided in Table 1.2.2, linear interpolation shall be performed on the basis of such values for the two rows of such Tables 1.2.1 or 1.2.2 that are immediately lower and immediately higher than such intermediate Operating Water Head. For such purpose of interpolation, the associated Contracted Unit Maximum Capacity shall be considered as an additional row of Table 1.2.1.)

### 1.3 Registered Capacity Tables

Pursuant to the Registered Capacity Test in accordance with Part IV of Schedule 17 in respect of the Commissioning Testing, the Annual Testing and the Additional Testing or any reassessment of the Registered Stability Limit in accordance with Part II of Schedule 1, as applicable, Table 1.3.1 (the “**Registered Capacity Table**”) shall be compiled or revised as set out in

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Paragraphs 4, 5 and 6 of Part IV of Schedule 17, which shall sets out, for the case where both transmission circuits of the Transmission Line are in operation, the Registered Capacity and the N Unit Registered Capacity, as defined in Part I of Schedule 1, at the Delivery Point for various Operating Water Head and number of Generating Units.

#### 1.4 Registered Unit Capacity Tables

Pursuant to any relevant Commissioning Testing, Annual Testing or Additional Testing or reassessment of Registered Stability Limit, as applicable, Tables 1.4.1 and 1.4.2 (the “**Registered XYB Unit Maximum Capacity Table**” and the “**Registered XYB Unit Minimum Capacity Table**”, respectively) shall also be compiled or revised as set out in Paragraph 4.4 of Part IV of Schedule 17. Such Tables 1.4.1 and 1.4.2 shall set out the maximum values and the minimum values of the generating capacity for each Generating Unit pursuant to the relevant testing at the respective Unit Metering Point for various Operating Water Head (the “**Registered XYB Unit Maximum Capacity**” and the “**Registered XYB Unit Minimum Capacity**”, respectively), in terms of the number of Generating Units that are in operation and under the same operating conditions regarding voltage, power factor and frequency as set out in Paragraph 1.1 of Part III of this Schedule 1. (For the purpose of determining the Registered XYB Unit Maximum Capacity for any intermediate Operating Water Head that has not been expressly provided in Table 1.4.1 or the Registered XYB Unit Minimum Capacity for any intermediate Operating Water Head that has not been expressly provided in Table 1.4.2, linear interpolation shall be performed on the basis of such values for the two rows of such Tables 1.4.1 or 1.4.2 that are immediately lower and immediately higher than such intermediate Operating Water Head. For such purpose of interpolation, the corresponding Operating Water Head and the associated Registered XYB Unit Maximum Capacity shall be considered as an additional row of Table 1.4.1.)

Pursuant to the establishment of Tables 1.4.1 and 1.4.2, the values in such tables for the corresponding Operating Water Head of the relevant day shall be used for the purpose of Dispatching. The ranges of generating capacity between the Registered XYB Unit Minimum Capacity and the Registered XYB Unit Maximum Capacity (the “**Unit Operating Range**”) as set out in such Tables 1.4.2 and 1.4.1, respectively, for a given number of Generating Units and a specific Operating Water Head, both being contained in the relevant Derived Declaration, shall constitute the range of generating capacity within which the NCC shall, other than for such Settlement Periods associated with any Generator System Outage or Generator Affected Force Majeure Outage that has been notified to EGAT, be entitled to send active power set points or Dispatch Instructions to each synchronized Generating Unit for the relevant day. Subject to any Derating of any particular Generating Unit during the Term, such Unit Operating Range for all the Generating Units synchronized to the EGAT System at a given time shall be identical.

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**Tables 1.1.1****Contracted Capacity Tables**

Values of Operating Water Head are in meters (m)

Values other than those under the columns "Operating Water Head" are the Contracted Capacity on the N units Contracted Capacity (in MW) defined in Paragraphs 1.1 and 2 of Part I of Schedule 1, respectively, being referred to the Delivery Point, when the specified number of Generating Units are in operation.

**Table 1.1.1 Contracted Capacity**

Operating Water Head (m)	Contracted Capacity (MW)						
	7 Units	6 Units	5 Units	4 Units	3 Units	2 Units	1 Unit
21.0	870.8	742.4	624.8	499.6	374.1	248.7	123.6
23.0	955.6	823.3	677.8	542.8	409.7	274.6	138.3
25.5	1067.1	917.2	762.5	610.4	459.8	307.6	154.3
26.0	1089.3	935.1	779.8	624.0	469.6	313.9	157.1
26.5	1111.2	952.6	796.5	637.3	479.1	319.9	159.7
27.0	1132.8	969.9	812.7	650.1	488.3	325.6	162.2
27.5	1154.0	986.8	828.0	662.2	496.9	330.9	164.4
28.0	1174.7	1003.4	842.2	673.4	504.9	335.9	166.5
28.5	1194.8	1019.7	855.1	683.5	512.3	340.5	168.4
29.0	1214.3	1035.6	866.5	692.4	518.8	344.6	170.1
29.5	1220.0	1051.3	876.1	700.0	524.5	348.2	171.6
29.7	1157.3	1057.8	879.6	702.8	526.6	349.6	172.2
30.1	1098.1	1068.6	884.7	706.7	529.7	351.6	173.0
30.4	1037.2	1037.2	888.6	709.7	532.3	353.3	173.7
30.8	973.2	973.2	891.4	711.9	534.3	354.8	174.3
31.1	906.2	906.2	892.9	713.0	535.7	355.9	174.8
31.5	837.3	837.3	837.3	712.9	536.4	356.6	175.2
31.9	765.7	765.7	765.7	711.6	536.3	356.9	175.4
32.3		691.2	691.2	691.2	535.5	356.7	175.5
32.7			614.9	614.9	533.7	356.1	175.4
33.0				543.4	531.3	355.1	175.2
33.4					459.2	353.4	174.8

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**Tables 1.2.1 and 1.2.2****Contracted Unit Capacity Tables**

Values of Operating Water Head are in meters (m).

Values other than those under the columns “Operating Water Head” are the Contracted XYB Unit Maximum Capacity (in MW) or the Contracted XYB Unit Minimum Capacity (in MW) for each Generating Unit, as applicable, being referred to the Unit Metering Point, when the specified number of Generating Units are in operation.

**Table 1.2.1 Contracted XYB Unit Maximum Capacity**

Operating Water Head (m)	Contracted XYB Unit Maximum Capacity (MW)						
	7 Units	6 Units	5 Units	4 Units	3 Units	2 Units	1 Unit
21.0	125.4	124.6	125.7	125.5	125.1	124.6	123.8
23.0	137.7	138.2	136.4	136.4	137.1	137.6	138.5
25.5	153.9	154.1	153.6	153.4	153.9	154.2	154.5
26.0	157.1	157.2	157.0	156.9	157.2	157.4	157.3
26.5	160.3	160.1	160.4	160.2	160.4	160.4	159.9
27.0	163.5	163.1	163.7	163.5	163.5	163.2	162.4
27.5	166.6	165.9	166.8	166.5	166.4	166.0	164.7
28.0	169.6	168.8	169.7	169.4	169.1	168.5	166.8
28.5	172.5	171.5	172.3	171.9	171.5	170.8	168.7
29.0	175.4	174.3	174.7	174.2	173.8	172.9	170.4
29.5	176.2	176.9	176.6	176.1	175.6	174.6	171.8
29.7	167.1	178.0	177.3	176.8	176.4	175.3	172.4
30.1	158.5	179.8	178.4	177.8	177.4	176.4	173.3
30.4	149.6	174.5	179.2	178.6	178.3	177.2	174.0
30.8	140.3	163.7	179.7	179.1	179.0	177.9	174.6
31.1	130.5	152.3	180.0	179.4	179.4	178.5	175.1
31.5	120.5	140.6	168.8	179.4	179.7	178.8	175.5
31.9	110.1	128.5	154.2	179.1	179.6	179.0	175.7
32.3		115.9	139.1	173.8	179.4	178.9	175.8
32.7			123.6	154.5	178.8	178.6	175.7
33.0				136.5	177.9	178.1	175.5
33.4					153.7	177.3	175.1

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**Table 1.2.2 Contracted XYB Unit Minimum Capacity**

Operating Water Head (m)	Contracted XYB Unit Minimum Capacity (MW)						
	7 Units	6 Units	5 Units	4 Units	3 Units	2 Units	1 Unit
21.0	62.7	62.3	62.8	62.7	62.6	62.3	61.9
23.0	68.8	69.1	68.2	68.2	68.5	68.8	69.3
25.5	77.0	77.1	76.8	76.7	76.9	77.1	77.3
26.0	78.6	78.6	78.5	78.4	78.6	78.7	78.7
26.5	80.2	80.1	80.2	80.1	80.2	80.2	80.0
27.0	81.7	81.5	81.9	81.7	81.7	81.6	81.2
27.5	83.3	83.0	83.4	83.3	83.2	83.0	82.3
28.0	84.8	84.4	84.9	84.7	84.5	84.2	83.4
28.5	86.3	85.8	86.2	86.0	85.8	85.4	84.3
29.0	87.7	87.1	87.3	87.1	86.9	86.4	85.2
29.5	88.1	88.4	88.3	88.1	87.8	87.3	85.9
29.7	83.5	89.0	88.7	88.4	88.2	87.7	86.2
30.1	79.2	89.9	89.2	88.9	88.7	88.2	86.6
30.4	74.8	87.3	89.6	89.3	89.1	88.6	87.0
30.8	70.1	81.8	89.9	89.6	89.5	89.0	87.3
31.1	65.3	76.2	90.0	89.7	89.7	89.2	87.6
31.5	60.3	70.3	84.4	89.7	89.8	89.4	87.7
31.9	55.1	64.3	77.1	89.5	89.8	89.5	87.8
32.3		58.0	69.5	86.9	89.7	89.5	87.9
32.7			61.8	77.3	89.4	89.3	87.8
33.0				68.3	89.1	89.1	87.7
33.4					76.9	88.6	87.5

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**Tables 1.3.1**  
**Registered Capacity Tables**

Values of Operating Water Head are in meter (m).

Values other than those under the columns "Operating Water Head" are the Registered Capacity and the N Unit Registered Capacity (in MW) defined in Paragraphs 1.2 and 2 of Part I of Schedule 1, being referred to the Delivery Point, when the specified number of Generating Units are in operation.

**Table 1.3.1 Registered Capacity**

Operating Water Head (m)	Registered Capacity (MW)						
	7 Units	6 Units	5 Units	4 Units	3 Units	2 Units	1 Unit
21.0							
23.0							
25.5							
26.0							
26.5							
27.0							
27.5							
28.0							
28.5							
29.0							
29.5							
29.7							
30.1							
30.4							
30.8							
31.1							
31.5							
31.9							
32.3							
32.7							
33.0							
33.4							

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**Tables 1.4.1 and 1.4.2 Registered Unit Capacity Tables**

Values of Operating Water Head are in meter (m).

Values other than those under the columns “Operating Water Head” are the Registered XYB Unit Maximum Capacity (in MW) or the Registered XYB Unit Minimum Capacity (in MW) for each Generating Unit, as applicable, being referred to the Unit Metering Point, when the specified number of Generating Units are in operation.

**Table 1.4.1 Registered XYB Unit Maximum Capacity**

Operating Water Head (m)	Registered XYB Unit Maximum Capacity (MW)						
	7 Units	6 Units	5 Units	4 Units	3 Units	2 Units	1 Unit
21.0							
23.0							
25.5							
26.0							
26.5							
27.0							
27.5							
28.0							
28.5							
29.0							
29.5							
29.7							
30.1							
30.4							
30.8							
31.1							
31.5							
31.9							
32.3							
32.7							
33.0							
33.4							

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**Table 1.4.2 Registered XYB Unit Minimum Capacity**

Operating Water Head (m)	Registered XYB Unit Minimum Capacity (MW)						
	7 Units	6 Units	5 Units	4 Units	3 Units	2 Units	1 Unit
21.0							
23.0							
25.5							
26.0							
26.5							
27.0							
27.5							
28.0							
28.5							
29.0							
29.5							
29.7							
30.1							
30.4							
30.8							
31.1							
31.5							
31.9							
32.3							
32.7							
33.0							
33.4							

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**Table 1.4.3 Incremental Capacity Differential Table**

Values other than those under the columns “Daily Declared Capacity” are the Incremental Capacity Differential (in MW) for the various operating hours, as applicable, being referred to the Delivery Point.

**Table 1.4.3 Incremental Capacity Differential**

Daily Declared Capacity (MW)	Incremental Capacity Differential (MW)					
	2hrs/day	4hrs/day	6hrs/day	8hrs/day	10hrs/day	12hrs/day
1,220	nil	nil	nil	nil	nil	nil
1,157	28	28	26	25	24	23
1,098	90	81	72	60	43	29
1,037	113	95	78	61	44	30
973	113	95	78	61	44	30
906	113	95	78	62	45	30
837	115	97	80	63	46	31
766	116	98	81	64	46	31
691	116	98	80	64	46	31
615	115	97	81	64	47	32
543	118	101	84	67	50	34
459	118	101	84	67	50	33

For the purposes of determining the Incremental Capacity Differential for any intermediate Daily Declared Capacity that has not been expressly provided in Table 1.4.3, linear interpolation shall be performed on the basis of such values for the two rows of such Table 1.4.3 that are immediately lower and immediately higher than such intermediate Daily Declared Capacity.

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## 2 Reactive Power Capability in respect of each Generating Unit

The “**Unit Reactive Power**” (in MVA<sub>r</sub>) at a given level of active power generation shall be defined as the reactive power capability for each Generating Unit, referred to at the respective Unit Metering Point, when such Generating Unit is providing such level of active power.

The contracted value of Unit Reactive Power (the “**Contracted Unit Reactive Power**”) in respect of various levels of active power generation shall be defined for nominal voltage and nominal frequency as follows:

**Table 1.5 Contracted Unit Reactive Power**

	Contracted Unit Reactive Power in MVA <sub>r</sub>	Unit Active Power in MW	Power Factor
Maximum lagging capability	81.0	61.0	0.60
Maximum lagging capability	84.0	174.0	0.90
Maximum lagging capability	85.0	176.0	0.90
Maximum leading capability	47.0	61.0	0.79
Maximum leading capability	87.0	180.0	0.90
Maximum leading capability	88.0	182.0	0.90

The value of the Unit Reactive Power resulting under the testing conditions specified by the Commissioning Procedures or the Post COD Testing Procedures, as applicable, shall be defined as the “Registered Unit Reactive Power”. The value of the Registered Unit Reactive Power at other levels of active power output shall be specified by the Reactive Power Capabilities diagram pursuant to the Commissioning Testing.

For the avoidance of doubt, the application of the Registered Unit Reactive Power for the purpose of operation shall not take into account any effect of voltage and frequency at the time of carrying out such operation.

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### 3 Unit Loading/Deloading Rate

#### 3.1 Unit Loading/Deloading Rate

The “**Unit Loading Rate**” (in MW/s) shall be defined as the average rate at which the active power output of a given Generating Unit, measured at the Unit Metering Point, is increasing between the time such Generating Unit departs from a stabilized initial active power output and the time it reaches the lesser of: (i) the instructed active power output; and (ii) ninety percent (90%) of the Registered Unit Maximum Capacity.

The “**Unit Deloading Rate**” (in MW/s) shall be defined as the average rate at which the active power output of a given Generating Unit, measured at the Unit Metering Point, is decreasing between the time such Generating Unit departs from a stabilized initial active power output and the time it reaches the greater of: (i) the instructed active power output; and (ii) one hundred and ten percent (110%) of the Registered Unit Minimum Capacity.

#### 3.2 Setting of the Unit Loading/Deloading Rate

##### 3.2.1 Setting Range of the Unit Loading/Deloading Rate

Unit Loading/Deloading Rate shall be adjustable within the following ranges:

**Table 1.6 Setting Range of the Unit Loading/Deloading Rate**

<b>Operating Range</b>	<b>Unit Loading/Deloading Rate</b>
Between no load and the Registered Unit Minimum Capacity as per Table 1.4.2 (start and stop sequences)	25 MW/min (i.e. 0.416 MW/s)
Between the Registered Unit Minimum Capacity as per Table 1.4.2 and the Registered Unit Maximum Capacity as per Table 1.4.1	25 MW/min (i.e. 0.416MW/s)

##### 3.2.3 Setting of the Unit Loading/Deloading Rate after COD

Upon request from the NCC through the voice communication system, the Unit Loading/Deloading Rate shall be set no later than two (2) hours after such request, provided that the NCC shall not make such request more than once in each day.

The step for setting the Unit Loading/Deloading Rate shall be 0.04 MW/s.

The setting of the Unit Loading/Deloading Rate for all seven (7) Generating Units shall be identical.

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For any extended period during which less than seven (7) Generating Units are in operation, the Unit Loading/DeLoading Rate for each such Generating Unit that remains in service may be set higher than 0.416 MW/s provided that the sum of such setting of the Unit Loading/DeLoading Rates for all Generating Units that are available for operation shall not exceed 2.912 MW/s.

### 3.3 Contracted Unit Loading/DeLoading Rate and Registered Unit Loading/DeLoading Rate

The contracted value of the Unit Loading/DeLoading Rate (the “Contracted Unit Loading Rate” and the “Contracted Unit DeLoading Rate”, respectively) shall be 0.416 MW/s.

Testing for the Unit Loading/DeLoading Rate shall be conducted in accordance with the Paragraph 3.1 of Part III of this Schedule 1. The value of the Unit Loading/DeLoading Rate resulting therefrom shall be defined as the “**Registered Unit Loading Rate**” and the “**Registered Unit DeLoading Rate**”, respectively.

## 4 Unit Primary Response

(a) Subject to the availability of spinning reserve, the governor of each Generating Unit shall, under both normal and exceptional operating conditions (as provided in Paragraph 2 of Part IV of Schedule 1), respond to and in accordance with any deviation of the system frequency from the nominal system frequency (50 Hz), by increasing or decreasing its active power output when there is respectively a falling or a rising in the system frequency, without any frequency dead-band other than that associated with the relevant mechanical limitations.

(b) Contracted Unit Primary Response

In respect of a given governor (speed/power) droop setting and an actual amount of change in the system frequency, the amount of change in the active power output of a given Generating Unit at any time no less than thirty-five (35) seconds after the stabilization of the frequency excursion shall be defined as the “Unit Primary Response”.

The contracted value of Unit Primary Response, defined as “Contracted Unit Primary Response”, shall be a function of the Unit Rated Power Output and the governor (speed/power) droop setting value, which shall be determined as follows:

Let  $\Delta f$  be the frequency deviation from the nominal system frequency (in percentage);

RatedPowerOutput be the Unit Rated Power Output (in MW);

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GovDroop be the governor (speed/power) droop setting value (in percentage); and

ConUnitPrRes be the Contracted Unit Primary Response (in MW) at the given stabilization time corresponding to the actual frequency excursion and the given governor (speed/power) droop setting value;

Then:  $\text{ConUnitPrRes} = \Delta f \times \text{RatedPowerOutput} / \text{GovDroop}$

(c) Registered Unit Primary Response

Testing for the Unit Primary Response at any stabilization time for any given Generating Unit shall be conducted in accordance with the Paragraph 12 of Part IV of Schedule 17. The value of the Unit Primary Response resulting from such testing shall be defined as the “Registered Unit Primary Response”.

The Contracted Unit Primary Response and the Registered Unit Primary Response shall be used for the purposes of Sections 9.5.8(e) and 9.6.7(e), as applicable.

- (d) The value of the governor droop setting shall be set by EGAT within the range specified in Paragraph 4.1 of Part II of Schedule 11. Generator shall neither disable such Operating Characteristic, including by locking the speed governor, nor alter its governor droop setting without EGAT’s prior agreement.
- (e) If a Generating Unit is required to operate below the Registered XYB Unit Minimum Capacity as set out in Table 1.4.2 due to a rising frequency excursion, the duration of such operation shall be limited to five (5) minutes, upon which the Generating Unit shall be driven to the No load, not excited State.

**5 Operation time for each Generating Unit**

**5.1 Maximum transition time between operating states**

The maximum time for each Generating Unit to change from one operating state to another operating state shall be as follows:

Shutdown State to Synchronized State	:	240 s
Unit at No-load, not excited State to complete shutdown (including shutdown of all auxiliary systems)	:	720 s

**5.2 Unit Start-Up Notice Time**

The “Unit Start-Up Notice Time” shall be the maximum time that is required for such Generating Unit to start-up from the Shutdown State and increase its active power output up to full load, measured from the instant that EGAT issues a start order and Dispatch Instruction to the relevant Generating Unit until such time when the respective Generating Unit reaches its Registered

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Unit Maximum Capacity. Based on a Unit Loading Rate that is set at 0.416 MW/s, the Unit Start-Up Notice Time for each Generating Unit shall be equal to six hundred and seventy seven (677) seconds.

## 6 Generator Stability Data

The Generator Stability Data provided in this Paragraph 6 of Part III of this Schedule 1 shall not prejudice either Generator's deviation therefrom in order to attain a better Registered Stability Limit or EGAT's right to request for reassessment in accordance with Part II of Schedule 1.

### 6.1 Main Generator Stability Data

#### (a) Generating Units

- inertia (turbine and generator combined) :  $H \geq 3.96 \text{ MW.s/MVA}$
- generator:
  - unsaturated direct transient reactance :  $X'd \leq 0.38 \text{ p.u.}$
  - unsaturated direct sub-transient reactance :  $X''d \leq 0.31 \text{ p.u.}$
  - open circuit transient time constant :  $T'do \leq 7.68 \text{ s}$
  - stator reactance :  $X_1 \leq 0.215 \text{ p.u.}$
  - Unit excitation system positive ceiling voltage:  $\geq 4.0$  times no-load excitation voltage

#### (b) Generator Transformers

- short circuit reactance :  $X_t \leq 13 \%$   
(at Base MVA = 200 MVA)

### 6.2 Other Generator Stability Data

The other Generator Stability Data shall be as listed and described in Paragraphs 3, 4 and 5 of Part II of Schedule 1.

## 7 Power System Stabilizer

Each Generating Unit excitation system shall be equipped with a power system stabilizer. The Generator shall procure the power system stabilizers that have been designed and manufactured based on the latest and most effective technology for the purpose provided herein. In the event that EGAT provides recommendation or technical requirements regarding the procurements of the power system stabilizers, The Generator shall take into account such recommendation and use best effort to satisfy EGAT's technical requirements.

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The settings of the power system stabilizers shall be tuned by Generator such that any local mode oscillations (0.7 to 2 Hz) and inter area mode oscillations (0.1 to 0.7 Hz) that occurs at any time and under any operating condition be damped out as much as possible within six (6) cycles of such power oscillations.

The Generator shall tune the power system stabilizer settings in accordance with the international practice associated therewith, which shall be performed in two stages:

- (a) the initial values of such settings shall be determined by simulation using a proven, commercially available and utility grade network simulation software, recognized as such by international electrical utilities, and the data provided by EGAT, as required as an input by such software, to properly model the EGAT System for the purpose of optimizing the settings of such power system stabilizers by simulation; and
- (b) the initial settings determined above shall be fine tuned, in cooperation with EGAT, through actual testing carried out during the Commissioning Testing or at such later mutually agreeable time.

With respect to such tuning:

- (i) The Generator shall provide to EGAT the plan of such tuning no later than twenty four (24) months after the EGAT Construction Obligation Commencement Date;
- (ii) EGAT and the Generator shall agree on such plan within three (3) months from the date of its issuance by the Generator, including regarding the assistance from qualified institutions or professionals that may be necessary; and
- (iii) EGAT shall provide the relevant data on the EGAT System that is necessary for the Generator to tune the power system stabilizer settings.

## 8. Water Levels

### 8.1 Water Level in Upstream Pond

The main and back-up water level measuring equipments are located as specified in Part III of Schedule 14 to measure the upstream water level of the Xayaburi Hydroelectric Power Project.

The normal range of the Upstream Water Level in the upstream pond shall be as follows:

High Operating Level	:	275.0 m ASL.
Low Operation Level	:	274.5 m ASL.
Minimum Operating Level	:	268.0 m ASL.

The maximum water level in flood conditions is 278.3m ASL.

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## 8.2 Tailrace Water Level

The main and back-up water level measuring equipments are located as specified in Part IV of Schedule 14 to measure the Tailrace Water Level of the Xayaburi Hydroelectric Power project.

The normal range of the operating water level in the tailrace channel shall be as follows:

High Operating Level : 255.7 m ASL.

Minimum Operating Level : 236.0 m ASL.

The maximum water level in flood conditions is 268.7 m ASL.

## 8.3 River Flow Calculation

The flow calculation will be performed and recorded by the Generator SCADA system taking in consideration the flow passing through:

- the Turbines (Unit 1 to 7 and EdL Unit)
- the Spillway
- The Navigation Lock
- The Fish Passing Facility

The Turbine Flow will be calculated by each Unit Digital Turbine Governor using an internal program/algorithm that will calculate the turbine flow based on the turbine characteristics (hill chart) and measured net head, blades and wicket gates positions, and unit output.

Spillway Flow will be directly calculated in the Generator SCADA system which will interpolate the flow from the Spillway flow curve based on the position of the radial gates and the water level in the upstream and downstream pond.

The Flow passing through the Navigation lock will be directly calculated and recorded in the Generator SCADA system based on the volume of the navigation lock, the upstream and downstream water levels and the number of operation reported.

The Fish Passing Facility flow will be directly calculated in the Generator SCADA system based on the water level in the upstream pond and position of the different gates within the system including fish ladder, auxiliary water supply for the powerhouse collecting gallery for the upstream migration and the surface bypass collector for downstream migration water.

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### **Part IV: Matters related to the Operation of the Generator System**

Part IV of this Schedule 1 sets out the operating conditions, operating states and Dispatch and control for operation of each Generating Unit and the Generator System.

#### **1 Normal configuration of the Transmission Line**

The normal operating configuration of the Transmission Line shall be two (2) transmission circuits in service, regardless of the number of Generating Units synchronized to the EGAT System and including the case where all seven (7) Generating Units are in the Shutdown State.

EGAT shall be entitled to trip one (1) transmission circuit of the Transmission Line at any time as it deems necessary in order to maintain the voltage of the interconnected system within the acceptable range.

#### **2 Operating conditions in respect of frequency and voltage**

##### **2.1 Normal operating conditions**

The respective normal ranges of frequency and voltage shall be as follows:

normal frequency range	:	49 Hz - 50.5 Hz
normal voltage range (at stator terminal)	:	95% to 105% of rated stator terminal voltage
normal voltage range (at the Xayaburi Switchyard)	:	475 kV - 525 kV

##### **2.2 Exceptional operating conditions**

The respective exceptional ranges of frequency and voltage shall be as follows:

exceptional frequency range	:	47 - 49 Hz and 50.5 - 52 Hz
exceptional voltage range (at stator terminal)	:	90%-95% and 105%-110% of rated stator terminal voltage
exceptional voltage range (at Xayaburi Switchyard)	:	450 - 475 kV and 525 - 550 kV

Whenever either:

- (i) the system frequency remains more than fifteen (15) minutes inside the exceptional frequency range;
- (ii) the system frequency either falls below 47.0 Hz or rises above 52.0 Hz;  
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- (iii) when the Interconnection Facilities are energized at 500 kV, the voltage at the 500 kV busbars of the Xayaburi Switchyard either falls below 450 kV or rises above 550 kV for a period the duration of which exceeds fifteen (15) minutes;

the relevant circuit breakers shall be tripped and the Generating Units which are synchronized with the EGAT System shall be driven to the No load, not excited State.

### **3 Operating states**

The operating states of a Generating Unit are defined as follows:

#### **3.1 Shutdown State**

At the Shutdown State, the Generating Unit is ready to start-up immediately upon a command given by Generator's operator following a Dispatch Instruction issued by the NCC or BCC.

#### **3.2 Synchronized State**

At the Synchronized State, the Generating Unit is ready to deliver active power output according to the active power set point which is issued by the NCC or BCC.

#### **3.3 No load, excited State**

This state is not stable and is reached during the start-up sequence. It corresponds to the state of the Generating Unit during synchronization sequence.

#### **3.4 No load, not excited State (or Hot Standby)**

This state is reached after tripping of the Generating Unit due to a fault which is external to such Generating Unit or an abnormal condition of the power system and cannot be requested by the NCC or BCC or the operator of Generator.

Once the fault has been cleared, the relevant Generating Unit that is then remains at No load, not excited State shall be re-synchronized only upon a start-up instruction issued by the NCC or BCC.

The duration that a Generating Unit remains at No load, not excited State shall be limited to twenty (20) minutes. Such Generating Unit shall be tripped to the Shutdown State if such period is exceeded.

For the avoidance of doubt, when the Generating Unit is in the operating states described in Paragraphs 3.1, 3.3 and 3.4 of this Part IV of Schedule 1, the Unit circuit breaker of such Generating Unit shall be open.

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#### 4. Dispatch and control for operation of Generating Units

Upon a request from the National Control Center (the "NCC") or Back-up Control Center (the "BCC") through the voice communication system and/or document, Generator shall start-up or stop the respective Generating Units as instructed by EGAT and shall carry out the appropriate switching actions for each equipment in the Xayaburi Switchyard in accordance with such request from the NCC, BCC or RCC. The active power set point for a Generating Unit shall be specified by Generator, which shall take Dispatch Instruction for such Generating Unit issued by the NCC or BCC.

Upon receiving a Dispatch Instruction from the NCC or BCC, regardless of the means through which such Dispatch Instruction is communicated to Generator, Generator shall check whether such Dispatch Instruction is consistent with the Unit Operating Range corresponding to the Registered Unit Maximum Capacity and the Registered XYB Unit Minimum Capacity, including Incremental Capacity Differential, for the relevant Operating Water Head and the number of Generating Units that are in operation as provided in the Tables 1.4.1, 1.4.2 and 1.4.3 of this Schedule 1, respectively. Whenever a Dispatch Instruction happens to be out of the said Unit Operating Range, Generator shall warn the NCC or BCC and correct the active power set point so that it complies with such Unit Operating Range.

Pursuant to the above process, the increase or decrease in the active power output of the relevant Generating Unit upon receiving such Dispatch Instruction shall, subject to any effect due to the action of the speed governor in response to any relevant frequency variations, be performed at the then effective setting of the Unit Loading Rate and Unit Deloading Rate.

#### 5. Nomenclature of Electrical Apparatus

For the purpose of safety operation, the Generator shall adopt EGAT's switching number standard in numbering and nomenclature of high voltage apparatus in Generator Subsystem.

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**Schedule 2****ENERGY TARIFF****1. General Information**

This Schedule 2 contains information in respect of the tariff for the electrical energy that EGAT purchases from the Generator in accordance with the terms and conditions of this Agreement.

The table provided in Paragraph 3 of this Schedule 2 (the "Tariff Table") sets out the tariff for Primary Energy, Secondary Energy and Excess Energy that EGAT purchases from the Generator in each Contract Year.

**2. Tariff for various Energy Components during different periods****2.1 Tariff for Test Energy**

The tariff applicable to Test Energy shall be the "Test Energy Tariff", being 0.57 Baht per kWh.

**2.2 Tariff during the Unit Operation Period**

The tariff for Primary Energy, Secondary Energy and Excess Energy comprised in the Unit Operation Energy which occurs during the period starting from (and including) the One Unit Operation Date until (but excluding) the Commercial Operation Date, called respectively as Unit Primary Energy, Unit Secondary Energy and Unit Excess Energy, shall be as follows:

- (i) the tariff for Unit Primary Energy shall be equal to the sum of two point eight zero four (2.804) Cents per kWh and zero point nine five three (0.953) Baht per kWh;
- (ii) the tariff for Unit Secondary Energy shall be equal to one point two three nine (1.239) Baht per kWh; and
- (iii) the tariff for Unit Excess Energy shall be equal to one point zero four nine (1.049) Baht per kWh.

**2.3 Tariff applicable from the Commercial Operation Date**

- (a) Other than the determination referred to in Paragraph 2.3(c) of this Schedule 2, the tariff for Primary Energy, Secondary Energy and Excess Energy in respect of a given Contract Year shall be that specified for the respective Energy Component and the respective Contract Year as provided in the Tariff Table.

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- (b) Other than the determination referred to in Paragraph 2.3(c) of this Schedule 2, in the event that the Term Termination Date occurs after the end of Contract Year 29, including the cases where: (i) the Scheduled Termination Date is extended due to Force Majeure in accordance with Section 8.1.2(f); and/or (ii) the Commercial Operation Date occurs on a date other than 1 January, the tariff applicable to Primary Energy, Secondary Energy and Excess Energy during the period after Contract Year 29 until the Term Termination Date shall be that specified for the respective Energy Component for Contract Year 29 as provided in the Tariff Table.
- (c) For the purposes of determining:
- (1) the Monthly Supply Excess PE Payment; and
  - (2) the adjustment of the determination for the Monthly Energy Payment pursuant to the set off of the Annual Supply Shortfall Energy against the Accumulated Supply Excess Energy;

the tariff applicable to each of the relevant Energy Components shall be as provided in accordance with Paragraphs 6(b) of Schedule 4 and Paragraph 2(a) of Schedule 5, respectively.

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**3. The Tariff Table**

Contract Year	Primary Energy (PE)		Secondary Energy(SE)	Excess Energy (EE)
	US Currency Cents/kWh	Thai Currency Baht/kWh	Thai Currency Baht/kWh	Thai Currency Baht/kWh
1	3.738	1.271	1.652	1.398
2	3.738	1.271	1.652	1.398
3	3.738	1.271	1.652	1.398
4	3.738	1.271	1.652	1.398
5	3.738	1.271	1.652	1.398
6	3.738	1.271	1.652	1.398
7	3.738	1.271	1.652	1.398
8	3.738	1.271	1.652	1.398
9	3.738	1.271	1.652	1.398
10	3.738	1.271	1.652	1.398
11	3.738	1.271	1.652	1.398
12	3.738	1.271	1.652	1.398
13	3.738	1.271	1.652	1.398
14	3.738	1.271	1.652	1.398
15	3.738	1.271	1.652	1.398
16	3.738	1.271	1.652	1.398
17	3.738	1.271	1.652	1.398
18	3.738	1.271	1.652	1.398
19	3.738	1.271	1.652	1.398
20	3.738	1.271	1.652	1.398
21	3.738	1.271	1.652	1.398
22	3.738	1.271	1.652	1.398
23	3.738	1.271	1.652	1.398
24	3.738	1.271	1.652	1.398
25	3.738	1.271	1.652	1.398
26	3.738	1.271	1.652	1.398
27	3.738	1.271	1.652	1.398
28	3.738	1.271	1.652	1.398
29	3.738	1.271	1.652	1.398

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**Schedule 3**  
**DECLARATION OF AVAILABILITY**

**Part I: Descriptions of Procedures in respect of Declaration**

**1 The Declaration Procedures**

Without prejudice to EGAT's right to verify or dispute regarding the accuracy thereof, the declaration process through which the Generator shall Declare to EGAT the Energy Availability and the generating capacity of the Facility (the "**Declaration Procedures**") during the period commencing from the Commercial Operation Date shall be described in Part I of this Schedule 3.

The Declaration Process shall comprise:

- (a) Annual Declaration, as more particularly described in Paragraph 1.1;
- (b) Monthly Declaration, as more particularly described in Paragraph 1.2;
- (c) Weekly Declaration, as more particularly described in Paragraph 1.3;
- (d) Derived Declaration, as more particularly described in Paragraph 1.4;
- (e) Interim Declaration, as more particularly described in Paragraph 1.5;
- (f) Final Declaration, as more particularly described in Paragraph 1.6; and
- (g) Declaration in respect of an Exceptional Outage, as more particularly described in Paragraph 1.7.

In the event that the date on which the Generator is required to submit to EGAT the Weekly Declaration or the Derived Declaration for a given period associated with the relevant Weekly Declaration or Derived Declaration, as applicable, is not a Business Day, the Generator shall submit to EGAT the Weekly Declaration or the Derived Declaration in respect of such period associated with the relevant Weekly Declaration or Derived Declaration, as applicable, on the last Business Day prior to the respective day specified in this Schedule 3.

**1.1 Annual Declaration**

**1.1.1 Annual Declaration during the Initial Period**

The Generator shall, on a date that is no later than five (5) days before the time it submits the first Monthly Declaration, submit to EGAT a provisional program regarding the Generator Planned Outages that would occur for the Initial First Period and the Initial Second Period (the "**Proposed Initial Period Planned Outage Program**") for each Commissioned Unit or each Generating Unit that is scheduled to be

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Commissioned, as applicable, setting for each Generator Planned Outage:

- (i) the start date and the finish date, taking into account the parameters of the typical maintenance activities set out in Part I of Schedule 20; and
- (ii) the generating capacity affected by the respective Generator Planned Outage based on the estimated average Operating Water Head for the relevant week.

The Parties shall discuss and reconcile the Proposed Initial Period Planned Outage Program with the requirements of the EGAT System and EGAT shall, no later than five (5) days before the end of the month in which the Proposed Initial Period Planned Outage Program was submitted, produce and issue to the Generator the “**Initial Period Planned Outage Program**”, which shall comprise the Initial Period Planned Outage Program for the Initial First Period and the Initial Period Planned Outage Program for the Initial Second Period described as follows:

**(a) Initial Period Planned Outage Program for the Initial First Period**

In respect of the portion of the Initial Period Planned Outage Program issued by EGAT that concerns the Initial First Period (the “Initial First Period Planned Outage Program”), the Generator shall be entitled to resubmit, on a date that is no later than five (5) days before the submittal of each subsequent Monthly Declaration for each month comprised in the Initial First Period, a proposed revised Initial First Period Planned Outage Program in order to reflect the updated maintenance program for the remaining portion of the Initial First Period, including the updated number of Commissioned Units and the updated program for Generator Planned Outages that would occur for each week comprised in the relevant month, provided that the total amount of the Generator Planned Outages with respect to the whole Initial First Period shall not exceed five hundred (500) GWh.

The Parties shall discuss and reconcile each such proposed revised Initial First Period Planned Outage Program with the requirements of the EGAT System and EGAT shall, no later than five (5) days before the end of the month in which it was submitted, produce and issue to the Generator a final version of the revised Initial First Period Planned Outage Program upon which it shall supersede the Initial First Period Planned Outage Program that was effective prior to the issuance of such revised

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Initial First Period Planned Outage Program and become binding for both Parties.

In the event that there is a need to change the expected outage start time and/or the expected outage finish time of any Generator Planned Outage contained in the Initial First Period Planned Outage Program due to either EGAT or the Generator, the Party that requests such change shall promptly inform the other Party in writing whereupon Sections 3.6.1(c) and 3.6.9 shall apply.

**(b) Initial Period Planned Outage Program for the Initial Second Period**

In respect of the portion of the Initial Period Planned Outage Program issued by EGAT that concerns the Initial Second Period (the "Initial Second Period Planned Outage Program"), the Generator shall be entitled to resubmit with the subsequent Monthly Declaration no later than six (6) Full Calendar Months prior to the end of the Initial First Period a proposed revised Initial Second Period Planned Outage Program (the "Proposed Initial Second Period Planned Outage Program") in order to reflect the updated maintenance program for the Initial Second Period.

The Parties shall discuss and reconcile this Proposed Initial Second Period Planned Outage Program with the requirements of the EGAT System and EGAT shall, no later than four (4) months prior to the end of the Initial First Period, produce and issue to the Generator a final version of the Initial Second Period Planned Outage Program upon which it shall become binding for both Parties.

In the event that there is a need to change the expected outage start time and/or the expected outage finish time of any Generator Planned Outage contained in the Initial Second Period Planned Outage Program due to either EGAT or the Generator, the Party that requests such change shall promptly inform the other Party in writing whereupon Sections 3.6.1(c) and 3.6.9 shall apply.

**1.1.2 Annual Declaration for the other Contract Years**

**(a) Seven-Year Rolling Program**

By 1 June of the second Contract Year and each Contract Year thereafter, the Generator shall submit in writing to EGAT a provisional program regarding the Generator Planned Outages that would occur for

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the next seven Contract Years **(the “Proposed Seven-Year Rolling Program”)**, which sets out, for each Generator Planned Outage:

- (i) the start date and the finish date, or where there is a possibility of flexibility in the dates, the earliest start date and the latest finish date; and
- (ii) the generating capacity affected by the respective Generator Planned Outage based on the estimated average Operating Water Head for the relevant month.

The timing and duration of each Maintenance Type comprised in such Proposed Seven-Year Rolling Program submitted by the Generator shall be: (aa) generally consistent with the respective periodicity and typical duration in respect of the relevant Maintenance Type comprised in the Typical Maintenance Plan set out in Part I of Schedule 20; and (bb) in accordance with the rules regarding Generator Planned Outages as provided in Paragraph 5.2.1 of Part I of Schedule 1. When compiling the Proposed Seven-Year Rolling Program the Generator shall be allowed to make reasonable adaptation, within Prudent Utility Practice, of the Typical Maintenance Work that are required to be performed in respect of each Maintenance Type contained therein from those described in the Typical Maintenance Plan to take into account the actual condition, history and evolution of the Generator System.

EGAT and the Generator shall, at such time and manner as provided in the Grid Code, discuss and reconcile the Proposed Seven-Year Rolling Program with the requirements of the EGAT System, including such requirement shown in the Typical Maintenance Plan set out in Part II of Schedule 20, provided that:

- (1) neither Party shall unreasonably withhold reconciliation of the Proposed Seven Year Rolling Program; and
- (2) subject to paragraph (1) above, EGAT shall be entitled to make adjustment regarding the timing of certain portions of the Proposed Seven-Year Rolling Program submitted by the Generator in order to make it consistent with the requirements of the EGAT System.

EGAT shall, by 1 September of each Contract Year, produce and issue to the Generator a final version of the “Seven-Year Rolling Program”, which shall be binding on both Parties.

**(b) Annual Planned Outage Program**

The **Annual Planned Outage Program** for a given Contract Year other than Contract Years 1 and 2 shall be defined as such

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corresponding part of the Seven-Year Rolling Program that was produced and issued by EGAT by 1 September of the immediately preceding Contract Year.

Such Annual Planned Outage Program shall set out, for each Generator Planned Outage:

- (i) the start date and the finish date; and
- (ii) the generating capacity affected by the respective Generator Planned Outage based on the estimated average Operating Water Head for the relevant month.

The Annual Planned Outage Program shall be binding for both EGAT and the Generator. In the event there is a need to change the expected outage start time and/or the expected outage finish time of any Generator Planned Outage contained in the relevant Annual Planned Outage Program due to either EGAT or the Generator, the Party that requests such change shall promptly inform the other Party in writing whereupon Sections 3.6.1(c) and 3.6.9 shall apply.

**(c) Annual Energy Availability Declaration**

By 1 September of each Contract Year, the Generator shall provide to EGAT a non-binding program regarding the expected Weekly Total Availability for each week of the next Contract Year.

No later than 1 November of each Contract Year, the Generator shall submit to EGAT a non binding annual Declaration for the following Contract Year (the “**Annual Energy Availability Declaration**”) which sets out the expected values of:

- (i) the Weekly Total Availability, the Weekly PE Availability and the Weekly SE Availability in respect of each week of the next Contract Year; and
- (ii) the Maximum Daily Declared Capacity and the Minimum Daily Declared Capacity in respect of each week comprised in the next Contract Year.

**1.2 Monthly Declaration**

1.2.1 No later than the tenth (10th) day of the immediately preceding month of each month of each Contract Year, the Generator shall submit to EGAT a Declaration (the “**Monthly Declaration**”) for the relevant month, which sets out, in respect of each day in the relevant month:

- (a) the expected Weekly Declared Capacity (in MW) for each week in that month; and

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- (b) in respect of any Generator Planned Outage, any Generator Maintenance Outage, any Exceptional Outage and any Generator Affected Force Majeure Outage that is expected to occur on any given day in that month:
- the expected outage start time on a Settlement Period basis;
  - the expected deduction to the Registered Capacity of the Facility that is caused by such outage calculated at the estimated average Operating Water Head for the relevant week, to be revised for accuracy in the relevant Weekly Declaration;
  - the characterization of each such outage in accordance with Section 3.6.

For the avoidance of doubt, the Monthly Declarations are prepared for information purposes only and shall not be used in the preparation of the Final Declaration.

### 1.3 Weekly Declaration

In respect of each week of each Contract Year, no later than 10 a.m. on each Wednesday of the immediately preceding week, the Generator shall submit to EGAT a weekly Declaration (the “Weekly Declaration”) for the relevant week

#### 1.3.1 Energy Availability Declaration

In respect of Energy Availability, each Weekly Declaration shall set out:

- (a) the Weekly Declared Capacity;
- (b) the total amount of Energy Availability during the PE Period of that week (the “**Weekly PE Availability**”) up to the Weekly Maximum Primary Energy Declaration as provided in Section 3.5.2(a);
- (c) the total amount of Energy Availability during the SE Period of that week (the “**Weekly SE Availability**”) up to the Weekly Maximum Secondary Energy Declaration as provided in Section 3.5.2(b); and
- (d) the total amount of Excess Energy Availability during that week (the “**Weekly EE Availability**”), which shall be equal to:

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- (i) (A) the Weekly Declared Capacity for the given week; times (B) the total number of hours comprised in that given week; less
- (ii) the sum of: (A) the Weekly PE Availability; and (B) the Weekly SE Availability.

### 1.3.2 Week Ahead Unavailability Declaration

In respect of any Generator Planned Outage, any Generator Maintenance Outage, any Exceptional Outage and any Generator Affected Force Majeure Outage that is expected to occur on any given day in that week, each Weekly Declaration shall set out:

- (a) the expected outage start time on a Settlement Period basis;
- (b) the duration in days and/or hours, as applicable;
- (c) the expected deduction to the Registered Capacity of the Facility that is caused by such outage calculated at the estimated average Operating Water Head for the relevant week; and
- (d) the characterization of each such outage in accordance with Section 3.6.

In respect of each week of the Initial First Period, the Generator may include such updated maintenance program comprised in the proposed revised Initial First Period Planned Outage Program as submitted by the Generator to EGAT in accordance with Paragraph 1.1.1(a) of Part I of Schedule 3 for the relevant week, which shall, subject to the final version of the revised Initial First Period Planned Outage Program issued by EGAT pursuant to the discussion and reconciliation that occurs thereafter, be considered as Generator Planned Outages.

### 1.3.3 Additional Information

By the time that the Generator submits such Weekly Declaration, the Generator shall also provide, in respect of the relevant week:

- (a) a forecast of the Maximum Daily Declared Capacity and the Minimum Daily Declared Capacity in respect of each day comprised in the relevant week; and
- (b) any Declared Operating Characteristics.

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## 1.4 Derived Declaration

### A. Daily Base Declaration

In respect of each day of each Contract Year, no later than 10 a.m. of the immediately preceding day, the Generator shall submit to EGAT a daily Declaration (the "Derived Declaration") for that day.

#### 1.4.1 Declaration of Daily Declared Capacity

In respect of generating capacity, each Derived Declaration shall set out:

- (a) the expected Operating Water Head of the relevant day as estimated at the time of issuance of the Derived Declaration;
- (b) a Daily Declared Capacity; and
- (c) other than due to Paragraph 1.4.3(b) regarding Declaration of Declared Operating Characteristics, the respective Unit Operating Range for 1 to N Generating Units by specifying the Registered Unit Minimum Capacity and the Registered Unit Maximum Capacity corresponding to each such Unit Operating Range for the expected Operating Water Head of the relevant day provided in paragraph (a) above and the respective number of Generating Units as required by Tables 1.4.2 and 1.4.1 of Part III of Schedule 1, respectively, where N is the maximum number of Generating Units that are Available for the relevant day.

For the avoidance of doubt,

- (I) in the event that a number of Settlement Periods comprised in the relevant day are associated with any Week Ahead Unavailability and/or Day Ahead Unavailability the duration of which is less than twenty-four (24) hours, the Generator shall Declare the relevant Generation Shortfall for each such Settlement Period in accordance with Paragraph 3.2.1(a) of Part I of Schedule 3; and
- (II) except for such Generating Unit that is associated with Derating or Pre Declared Unavailability, for Dispatching purpose all Generating Units shall be considered identical, including being capable of operating within the same Unit Operating Range.

#### 1.4.2 Pre Declared Unavailability Declaration

In respect of each Generator Planned Outage, Generator Maintenance

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Outage, any Exceptional Outage and any Generator Affected Force Majeure Outage which is either scheduled or expected to occur for that day, each Derived Declaration shall set out:

- (a) the expected outage start time and the expected outage finish time on a Settlement Period basis, as provided in Section 3.6;
- (b) the deduction to the Registered Capacity of the Facility that is solely caused by such outage;
- (c) the characterization of each such outage in accordance with Section 3.6; and
- (d) whether the Unavailability associated therewith is a Week Ahead Unavailability or a Day Ahead Unavailability.

#### 1.4.3 Additional Information

By the time that the Generator submits such Derived Declaration, the Generator shall also provide, in respect of the relevant day:

- (a) the priority level for each Generating Unit; and
- (b) any Declared Operating Characteristics.

### **B. Daily Additional Energy Availability Declaration**

In respect of a given day for which the Daily Declared Capacity is greater than the relevant Weekly Declared Capacity (such portion of Daily Declared Capacity that is in excess of the relevant Weekly Declared Capacity being defined as “**Daily Additional Declared Capacity**”), that the Generator shall be entitled to Declare the Additional Energy Availability for the relevant day to be included in the Derived Declaration for such day, which shall set out:

- (a) the total amount of additional Primary Energy Availability of that day (the “**Daily Additional PE Availability**”) up to the Daily Maximum Additional Primary Energy Declaration as provided in Section 3.5.2(c);
- (b) the total amount of additional Secondary Energy Availability of that day (the “**Daily Additional SE Availability**”) up to the Daily Maximum Additional Secondary Energy Declaration as provided in Section 3.5.2(d); and
- (c) the total amount of additional Excess Energy Availability of that day (the “**Daily Additional EE Availability**”), which shall be equal to:
  - (i) (A) the positive difference resulting from the Daily Declared Capacity less the relevant Weekly Declared Capacity; times (B) twenty-four (24); less

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- (ii) the sum of: (A) the Daily Additional PE Availability; and (B) the Daily Additional SE Availability.

### 1.5 Interim Declaration

At any time after the issuance of a Derived Declaration, either on the day during which such Derived Declaration is made or the day during which such Derived Declaration relates, upon the earliest time when the Generator is aware of the actual or expected occurrence or the actual or expected cessation of any additional event not included in the Weekly Declaration and the Derived Declaration (including any Generator Short Notice Outage and any Generator Forced Outage), the Generator shall immediately submit to EGAT an "Interim Declaration" notifying EGAT of the occurrence or the cessation of such events.

#### 1.5.1 Declaration of occurrence of Generator Short Notice Outage, Generator Forced Outage or Generator Affected Force Majeure Outage

In respect of any Generator Short Notice Outage, Generator Forced Outage or Generator Affected Force Majeure Outage the full or partial effect thereof has not been included in the relevant Derived Declaration, each Interim Declaration shall set out:

- (a) the time at which such Generator Short Notice Outage, Generator Forced Outage or Generator Affected Force Majeure Outage actually starts or the revised value of the expected outage start time, as applicable, on a Settlement Period basis;
- (b) the deduction to the Registered Capacity of the Facility that is caused by such outage;
- (c) the characterization of each such outage in accordance with Section 3.6; and
- (d) the identification of the Machine Limitation in respect of the relevant Generating Unit or any part thereof and the expected remedial actions, if applicable.

#### 1.5.2 Declaration of cessation of Generator System Outage

In respect of any Generator System Outage, each Interim Declaration shall set out the time at which such Generator System Outage actually finishes or the revised value of the expected outage finish time, as applicable.

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## 1.6 Final Declaration

The Generator shall, by three (3) Business Days after the end of the relevant week, provide to EGAT the “**Final Declaration**” for that week, which shall be determined on the basis of the Weekly Declaration and the Derived Declaration”.

Calculation of Final Declaration shall be in accordance with Paragraph 3 of Part II of Schedule 3.

## 1.7 Declaration in respect of an Exceptional Outage

### 1.7.1 Declarations

#### (a) Notice of a Provisional Exceptional Outage

At any time after the occurrence of an exceptional event that satisfies the qualification of Exceptional Outage provided in Paragraph 2 of Part I of Schedule 20, the Generator may issue a written notice to EGAT in order to claim the occurrence of such exceptional event (the “**Provisional Exceptional Outage**”), together with the following information:

- (i) identification regarding the scope of the Provisional Exceptional Outage, i.e. the affected Generating Units and/or relevant Machine Limitation in respect of the Generating Unit or any part thereof;
- (ii) the start date and the anticipated finish date for such Provisional Exceptional Outage; and
- (iii) the expected remedial actions.

Subject to being converted into an Exceptional Outage pursuant to the confirmation of the relevant claim by the Generator in accordance with Paragraph 1.7.1(b) below, such Provisional Exceptional Outage shall be deemed to be a Generator Maintenance Outage for the purpose of this Agreement, including the determination and payments in respect of liquidated damages in accordance with Section 9.6.4.

#### (b) Confirmation of the claim of an Exceptional Outage

At any time after the aggregate Unavailability associated with a given Provisional Exceptional Outage is equal to or greater than three hundred and thirty (330) GWh, the Generator may issue a written notice to EGAT confirming its intention that the relevant Provisional Exceptional Outage shall be claimed by the Generator as an Exceptional Outage, provided that the

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Generator may issue such written notice to EGAT only once in each of:

- (a) the period starting from the Commercial Operation Date until the fifteenth anniversary of the Commercial Operation Date; and
- (b) the remaining period of the Term.

If the Generator does not confirm its intention that the relevant Provisional Exceptional Outage shall be claimed as an Exceptional Outage, it shall be deemed that the right to claim such an Exceptional Outage has not been exercised, and remains intact.

The Generator may, prior to confirming a claim of an Exceptional Outage, issue a notice of another Provisional Exceptional Outage. Upon such a notice the claim regarding the previous Provisional Exceptional Outage shall be immediately and automatically canceled.

#### 1.7.2 Application of the Exceptional Outage

Application of the Exceptional Outage shall be restricted to the scope defined in Paragraph 1.7.1(a)(i) above, provided that such scope may be extended to include any other Generating Units or any part thereof if, subject to compliance with Prudent Utility Practice, the work carried out in respect of the originally defined scope affects the operation of such other Generating Units.

#### 1.7.3 Termination of the Exceptional Outage

Upon the completion of the maintenance, commissioning and checks associated with the Exceptional Outage, the Generator shall notify EGAT the termination thereof and the relevant Generating Units shall be deemed to be Available thereafter.

#### 1.7.4 Accounting in respect of an Exceptional Outage

In respect of the defined scope and the actual duration of the relevant Exceptional Outage claimed by the Generator:

- (a) other than as provided in Section 9.6.9, no further Generator Maintenance Outage, Generator Short Notice Outage or Generator Forced Outage shall be accounted for the purpose of the determination of liquidated damages; and

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- (b) the Unavailability associated with Exceptional Outage shall be classified as Pre Declared Unavailability for the purpose of the determination of Final Declaration.

## 2 **Principle in respect of Energy Availability Declaration**

In addition to Paragraph 1 of Part I of Schedule 3, in respect of the determination of Energy Availability for a given time period, in the event that such Energy Availability is Declared more than once or could be derived from more than one basis, the lowest value of Energy Availability associated therewith or resulting therefrom shall prevail.

## 3 **Definitions and Concepts in respect of Unavailability**

### 3.1 **Actions to be taken regarding Generator Affected Force Majeure Outage**

Upon the occurrence of a Generator Affected Force Majeure Outage:

- (a) if such Generator Affected Force Majeure Outage occurs pursuant to a Thai Political Force Majeure, EGAT shall provide the Generator with all relevant information including the anticipated or actual suspension period in association therewith, as appropriate, as soon as practicable after the occurrence of such Thai Political Force Majeure;
- (b) the Generator shall provide EGAT with all relevant information, including the anticipated or actual Generation Shortfall and Unavailability Period of the relevant Unavailability in association therewith, as appropriate, as soon as practicable after the occurrence of such Generator Affected Force Majeure Outage; and
- (c) the Generator shall include the effect of such Generator Affected Force Majeure Outage in the relevant Weekly Declaration and/or Derived Declaration based on its latest knowledge and information at the time of making such Declarations.

### 3.2 **Generation Shortfall and Unavailability Period in respect of Unavailability**

The relevant shortfall in generating capacity (the “**Generation Shortfall**”) and the relevant occurrence period (the “**Unavailability Period**”) associated with any Unavailability shall be defined as follows:

#### 3.2.1 **Generation Shortfall**

- (a) **For the purpose of making the Weekly Declaration or the Derived Declaration**

Other than expressly provided otherwise, for the purposes of determining the generating capacity that is Declared to be Available in respect of a given Settlement Period and a specific

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type of outage or Unavailability in the relevant Weekly Declaration or the relevant Derived Declaration, as the case may be, the “**Generation Shortfall**” referred to in connection with each Declaration shall be the shortfall in generating capacity for which the Available generating capacity of the Facility is less than the Registered Capacity for seven (7) Generating Units as required by Table 1.3.1, such Registered Capacity for seven (7) Generating Units being the value corresponding to the expected Operating Water Head for such Settlement Period as anticipated at the time of the respective Declaration, as appropriate.

Notwithstanding the foregoing, for the purposes of determining the Weekly Maximum Primary Energy Declaration and Weekly Maximum Secondary Energy Declaration in accordance with Section 3.5.2, the Generation Shortfall in respect of the Week Ahead Unavailability shall be defined as the shortfall in generating capacity for which the estimated Registered Capacity in respect of the remaining Available Generating Units that is Declared Available for such Settlement Period in the relevant Weekly Declaration is less than the estimated Registered Capacity for seven (7) Generating Units, both of which being corresponding to the average Operating Water Head estimated by the Generator in the relevant Weekly Declaration.

(b) For the purpose of determining the Final Declaration

For the purpose of determining the Final Declaration, any reference to Generation Shortfall shall be made together with the type of Unavailability and the Unavailability Period or other applicable time duration in association therewith. For example, PEGenShortDA shall be the Generation Shortfall in respect of Day Ahead Unavailability that occurs during a given PE Period.

For the purpose of determining the Final Declaration, the Generation Shortfall associated with a given type of Unavailability shall be defined as follows:

(1) Generation Shortfall associated with Pre Declared Unavailability

In respect of a given Settlement Period comprised in the relevant Unavailability Period, the Generation Shortfall in respect of Pre Declared Unavailability shall be defined as the shortfall in generating capacity for which the lesser of:

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- (aa) the generating capacity that is Declared to be Available for such Settlement Period in the relevant Derived Declaration; and
- (bb) the generating capacity that has been Declared to be Available for such Settlement Period in the relevant Weekly Declaration,

is less than the relevant Daily Declared Capacity.

(2) Generation Shortfall associated with Week Ahead Unavailability

In respect of a given Settlement Period comprised in the relevant Unavailability Period, for the purposes of determining the Weekly Derived PE Availability and Weekly Derived SE Availability in accordance with Paragraph 2.3 of Part II of Schedule 3, the Generation Shortfall in respect of Week Ahead Unavailability shall be defined as the shortfall in generating capacity for which the generating capacity that is Declared to be Available for such Settlement Period in the relevant Weekly Declaration is less than the relevant Daily Declared Capacity.

(3) Generation Shortfall associated with Day Ahead Unavailability

In respect of a given Settlement Period comprised in the relevant Unavailability Period, the Generation Shortfall in respect of Day Ahead Unavailability shall be defined as the shortfall in generating capacity for which the generating capacity that is Declared to be Available for such Settlement Period in the relevant Derived Declaration is less than the generating capacity that has been Declared to be Available for such Settlement Period in the relevant Weekly Declaration.

(4) Generation Shortfall associated with Undeclared Force Majeure Unavailability

In respect of a given Settlement Period comprised in the relevant Unavailability Period, the Generation Shortfall in respect of Undeclared Force Majeure Unavailability shall be defined as the shortfall in generating capacity associated with a Generator Affected Force Majeure Outage for which the lesser of:

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- (aa) the minimum value of Available generating capacity that the Generator notifies EGAT in the Interim Declaration for such Settlement Period; and
  - (bb) the generating capacity of the Facility that is actually achievable for such Settlement Period,
- is less than the lesser of:
- (i) the generating capacity that is Declared to be Available for such Settlement Period in the relevant Derived Declaration; and
  - (ii) the generating capacity that has been Declared to be Available for such Settlement Period in the relevant Weekly Declaration.
- (5) Generation Shortfall associated with Undeclared Unavailability

In respect of a given Settlement Period comprised in the relevant Unavailability Period, the Generation Shortfall in respect of Undeclared Unavailability shall be defined as the shortfall in generating capacity associated with a Machine Outage for which the lesser of:

- (aa) the minimum value of Available generating capacity that the Generator notifies EGAT in the Interim Declaration for such Settlement Period; and
  - (bb) the generating capacity of the Facility that is actually achievable for such Settlement Period,
- is less than the lesser of:
- (i) the generating capacity that is Declared to be Available for such Settlement Period in the relevant Derived Declaration; and
  - (ii) the generating capacity that has been Declared to be Available for such Settlement Period in the relevant Weekly Declaration.

### 3.2.2 Unavailability Period

An “**Unavailability Period**” shall be defined as the portion of time associated with an Unavailability of a given type, during which the

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Generator Declares a single value of Generation Shortfall as defined in Paragraph 3.2.1(a) of Part I of this Schedule 3.

The duration of an Unavailability Period (in hours) shall be equal to the number of Settlement Periods for which part or all of each such Settlement Period is associated with such Unavailability.

For the purpose of determining the relevant Final Declaration, the determination of Unavailability Period in respect of each type of Unavailability shall be in accordance with Section 3.7.2(B).

3.2.3 Characterization of Unavailability Period on the basis of PE Period and SE Period

An Unavailability Period may be further characterized depending on whether it falls within a particular PE Period or, as the case may be, a particular SE Period as follows:

(1) PE Qualified Unavailability Period

For the purpose of determining the effect of Unavailability in this Schedule 3:

- (a) “**PE-WA Period**” shall be defined as the portion of the PE Period that is associated with Week Ahead Unavailability;
- (b) “**PE-DA Period**” shall be defined as the portion of the PE Period that is associated with Day Ahead Unavailability; and
- (c) “**PE-UFM Period**” shall be defined as the portion of the PE Period that is associated with Undeclared Force Majeure Unavailability.

(2) SE Qualified Unavailability Period

For the purpose of determining the effect of Unavailability in this Schedule 3:

- (a) “**SE-WA Period**” shall be defined as the portion of the SE Period that is associated with Week Ahead Unavailability;
- (b) “**SE-DA Period**” shall be defined as the portion of the SE Period that is associated with Day Ahead Unavailability; and

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- (c) “**SE-UFM Period**” shall be defined as the portion of the SE Period that is associated with Undeclared Force Majeure Unavailability.

### 3.3 Weekly Unavailability and Monthly Unavailability

In respect of a particular type of Unavailability defined in Section 3.7.2 and a given week, Weekly Unavailability shall be defined as the total amount of Unavailability related thereto that occurs during any time of such week.

In respect of a particular type of Unavailability defined in Section 3.7.2 and a given month, Monthly Unavailability shall be defined as the total amount of Unavailability related thereto that occurs during any time of such month.

Weekly Unavailability and Monthly Unavailability, as applicable, that are associated with each type of Unavailability defined herein and for either a PE Period or a SE Period shall be determined on the basis of such Unavailability determined in the respective Paragraphs of this Schedule 3.

For the purposes of determining Force Majeure Offset Amounts in accordance with Section 17.4, Monthly Force Majeure Unavailability in respect of Primary Energy and Monthly Force Majeure Unavailability in respect of Secondary Energy shall be defined as the Unavailability associated with any Generator Affected Force Majeure Outage occurring during the PE Period or the SE Period of the relevant month, respectively, as determined in Paragraph 1(a)(2) of Schedule 10.

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## Part II: Calculations of Availability and Unavailability

Part II of Schedule 3 provides the calculation related to the Declaration Procedures.

### 1 Weekly Declaration

#### 1.1 **Reconciliation of Weekly Availability and Energy Availability determined on the basis of the Daily Declared Capacity prior to Adjustment of Unavailability other than Week Ahead Unavailability**

The Weekly PE Availability, the Weekly SE Availability and the Weekly EE Availability Declared by the Generator in accordance with Paragraph 1.3 of Part I of Schedule 3 shall first be reconciled with the Weekly Derived PE Availability, the Weekly Derived SE Availability and the Weekly Derived EE Availability that are determined on the basis of the Daily Declared Capacity Declared by the Generator in accordance with Paragraph 1.4 of Part I of Schedule 3 as follows:

Let: WePEAvail be the Weekly PE Availability Declared by the Generator in accordance with this Schedule 3;

WeSEAvail be the Weekly SE Availability Declared by the Generator in accordance with this Schedule 3;

WeEEAvail be the Weekly EE Availability Declared by the Generator in accordance with this Schedule 3;

WeDePEAvail be the Weekly Derived PE Availability determined in Paragraph 2.3.3 of Part II of this Schedule 3;

WeDeSEAvail be the Weekly Derived SE Availability determined in Paragraph 2.3.4 of Part II of this Schedule 3;

WeDeEEAvail be the Weekly Derived EE Availability determined in Paragraph 2.3.5 of Part II of this Schedule 3;

RecPEAvail be the reconciled value of the Weekly PE Availability after being compared with the Weekly Derived PE Availability;

RecSEAvail be the reconciled value of the Weekly SE Availability after being compared with the Weekly Derived SE Availability;

RecEEAvail be the reconciled value of the Weekly EE Availability after being compared with the Weekly Derived EE Availability;

Then: RecPEAvail = Min (WePEAvail, WeDePEAvail)

RecSEAvail = Min (WeSEAvail, WeDeSEAvail)

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$$\text{RecEEAvail} = \text{Min} (\text{WeEEAvail}, \text{WeDeEEAvail})$$

## 1.2 Adjustment of Weekly Declaration in respect of Machine Unavailability

### 1.2.1 Adjustment of Weekly Declaration due to Day Ahead Unavailability

#### (A) Adjustment associated with Day Ahead Unavailability in respect of the PE Period

Let: “**PE-DA Period**” be the portion of time defined in Paragraph 3.2.3(1)(b) of Part I of this Schedule 3;

PEGenShortDA(k) be the Generation Shortfall of the Facility during the PE-DA Period k, such Generation Shortfall being solely associated with the applicable Day Ahead Unavailability and determined in accordance with Paragraph 3.2.1(b)(3) of Part I of this Schedule 3;

PEDurDA(k) be the number of Settlement Periods comprised in the PE-DA Period k; and

WePEUnavailDA be the Weekly Unavailability in association with all Day Ahead Unavailability that occurs during the PE-DA Period in the given week;

Then:  $\text{WePEUnavailDA} = \sum [\text{PEGenShortDA}(k) \times \text{PEDurDA}(k)]$

Where summation is taken for all PE-DA Periods comprised in such week.

#### (B) Adjustment associated with Day Ahead Unavailability in respect of the SE Period

Let: “**SE-DA Period**” be the portion of time defined in Paragraph 3.2.3(2)(b) of Part I of this Schedule 3;

SEGenShortDA(k) be the Generation Shortfall of the Facility during the SE-DA Period k, such Generation Shortfall being solely associated with the applicable Day Ahead Unavailability and determined in accordance with Paragraph 3.2.1(b)(3) of Part I of this Schedule 3;

SEDurDA(k) be the number of Settlement Periods comprised in the SE-DA Period k; and

WeSEUnavailDA be the Weekly Unavailability in association with all Day Ahead Unavailability that occurs during the SE-DA Period in the given week;

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Then:  $WeSEUnavailDA = \sum [SEGenShortDA(k) \times SEDurDA(k)]$

Where summation is taken for all SE-DA Periods comprised in such week.

1.2.2 Adjustment of Weekly Declaration due to Undeclared Force Majeure Unavailability

(A) Adjustment associated with Undeclared Force Majeure Unavailability in respect of the PE Period

Let: “**PE-UFM Period**” be the portion of time defined in Paragraph 3.2.3(1)(c) of Part I of this Schedule 3;

PEGenShortUFM(k) be the Generation Shortfall of the Facility during the PE-UFM Period k, such Generation Shortfall being solely associated with the applicable Undeclared Force Majeure Unavailability and determined in accordance with Paragraph 3.2.1(b)(4) of Part I of this Schedule 3;

PEDurUFM(k) be the number of Settlement Periods comprised in the PE-UFM Period k; and

WePEUnavailUFM be the Weekly Unavailability in association with all Undeclared Force Majeure Unavailability that occurs during the PE-UFM Period in the given week;

Then:  $WePEUnavailUFM = \sum [PEGenShortUFM(k) \times PEDurUFM(k)]$

Where summation is taken for all PE-UFM Periods comprised in such week.

(B) Adjustment associated with Undeclared Force Majeure Unavailability in respect of the SE Period

Let: “**SE-UFM Period**” be the portion of time defined in Paragraph 3.2.3(2)(c) of Part I of this Schedule 3;

SEGenShortUFM(k) be the Generation Shortfall of the Facility during the SE-UFM Period k, such Generation Shortfall being solely associated with the applicable Undeclared Force Majeure Unavailability and determined in accordance with Paragraph 3.2.1(b)(4) of Part I of this Schedule 3;

SEDurUFM(k) be the number of Settlement Periods comprised in the SE-UFM Period k; and

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WeSEUnavailUFM be the Weekly Unavailability in association with all Undeclared Force Majeure Unavailability that occurs during the SE-UFM Period in the given week;

Then:  $AgSEUnavailUFM = \sum [SEGenShortUFM(k) \times SEDurUFM(k)]$

Where summation is taken for all SE-UFM Periods comprised in such week.

### 1.2.3 Adjustment of Weekly Declaration due to Undeclared Unavailability

#### (A) Determination of the duration to be used for the adjustment due to Undeclared Unavailability

Let: “**Equivalent UD Period**” be the equivalent period to be used for the adjustment of the Weekly Declaration due to the effect of Undeclared Unavailability, starting from the Settlement Period during which such Undeclared Unavailability occurs and continuing for a duration equal to EquiDurUD provided herein;

DurUD1 be the number of Settlement Periods starting from the time such relevant Undeclared Unavailability occurs until the time at which the last Generator System Outage associated with such Undeclared Unavailability actually finishes, as evidenced by either the notification of the Generator or the Post Event Notice of EGAT in association therewith, as the case may be;

DurUD2 be the number of Settlement Periods starting from the time such relevant Undeclared Unavailability occurs until the Notified Outage Finish Time of the last Generator System Outage associated with such Undeclared Unavailability;

DurUD3 be the number of Settlement Periods starting from the time such relevant Undeclared Unavailability occurs until the end of the Notifying Period defined in accordance with Section 3.7.2(B)(c); and

EquiDurUD be the duration of the Equivalent UD Period;

Then:  $EquiDurUD = \text{Max} (DurUD1, DurUD2, DurUD3)$

#### (B) Adjustment associated with Undeclared Unavailability in respect of the PE Period

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Let: GenShortUD be the Generation Shortfall of the Facility during the UD Period, such Generation Shortfall being solely associated with the applicable Undeclared Unavailability and determined in accordance with Paragraph 3.2.1(b)(5) of Part I of this Schedule 3;

PEDurUD be the number of Settlement Periods that is comprised in both the PE Period and the relevant Equivalent UD Period; and

WePEUnavailUD be the Weekly Unavailability in association with all Undeclared Unavailability to be applied to the Weekly PE Availability of such week;

Then:  $WePEUnavailUD = \sum (GenShortUD \times PEDurUD)$

Where summation is taken for the whole PE Period in the relevant week that is associated with any Equivalent UD Period.

(C) Adjustment associated with Undeclared Unavailability in respect of the SE Period

Let: GenShortUD be the Generation Shortfall of the Facility during the UD Period, such Generation Shortfall being solely associated with the applicable Undeclared Unavailability and determined in accordance with Paragraph 3.2.1(b)(5) of Part I of this Schedule 3;

SEDurUD be the number of Settlement Periods that is comprised in both the SE Period and the relevant Equivalent UD Period; and

WeSEUnavailUD be the Weekly Unavailability in association with all Undeclared Unavailability to be applied to the Weekly SE Availability of such week;

Then:  $WeSEUnavailUD = \sum (GenShortUD \times SEDurUD)$

Where the summation is taken for the whole SE Period of the relevant week that is associated with any Equivalent UD Period.

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### 1.3 Adjustment of Weekly Declaration in respect of Unavailability associated with Water Supply Limitation

Let: DaiPEUnavailWS be the Daily Unavailability in association with Water Supply Limitation that occurs in respect of the PE Period of a relevant day of a given week as determined in Paragraph 2.2.3 of Part II of Schedule 3;

DaiSEUnavailWS be the Daily Unavailability in association with Water Supply Limitation that occurs in respect of the SE Period of a relevant day of a given week as determined in Paragraph 2.2.3 of Part II of Schedule 3;

WePEUnavailWS be the Weekly Unavailability in association with Water Supply Limitation that occurs in respect of the PE Period for all Weekdays comprised in such given week; and

WeSEUnavailWS be the Weekly Unavailability in association with Water Supply Limitation that occurs in respect of the SE Period for all days comprised in such given week;

Then:  $WePEUnavailWS = \sum DaiPEUnavailWS$

$WeSEUnavailWS = \sum DaiSEUnavailWS$

Where the first summation is taken for all Weekdays comprised in that relevant week and the second summation is taken for all days comprised in that relevant week.

### 1.4 Adjustment of Weekly Declaration in respect of Unavailability associated with Tailwater Level Limitation

Let: DaiPEUnavailTL be the Daily Unavailability in association with Tailwater Level Limitation that occurs in respect of the PE Period of a relevant day of a given week as determined in Paragraph 2.2.4 of Part II of Schedule 3;

DaiSEUnavailTL be the Daily Unavailability in association with Tailwater Level Limitation that occurs in respect of the SE Period of a relevant day of a given week as determined in Paragraph 2.2.4 of Part II of Schedule 3;

WePEUnavailTL be the Weekly Unavailability in association with Tailwater Level Limitation that occurs in respect of the PE Period for all Weekdays comprised in such given week; and

WeSEUnavailTL be the Weekly Unavailability in association with Tailwater Level Limitation that occurs in respect of the SE Period for all days comprised in such given week;

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Then:  $WePEUnavailTL = \sum DaiPEUnavailTL$

$WeSEUnavailTL = \sum DaiSEUnavailTL$

Where the first summation is taken for all Weekdays comprised in that relevant week and the second summation is taken for all days comprised in that relevant week.

### 1.5 Determination of Adjusted Weekly PE Availability, Adjusted Weekly SE Availability and Adjusted Weekly EE Availability

At the end of the week the reconciled values of the Weekly PE Availability, the Weekly SE Availability and the Weekly EE Availability shall be adjusted for any Unavailability the effect of which has not been included in the Weekly Declaration (including, for the avoidance of doubt, any Unavailability associated with Water Supply Limitation or Tailwater Level Limitation determined in Paragraphs 1.3 or 1.4 of Part II of Schedule 3, as applicable), the results pursuant thereto being defined as the “**Adjusted Weekly PE Availability**”, the “**Adjusted Weekly SE Availability**” and the “**Adjusted Weekly EE Availability**”, respectively.

#### 1.5.1 Determination of Adjusted Weekly PE Availability

Let: RecPEAvail and RecSEAvail be the reconciled value of the Weekly PE Availability and the Weekly SE Availability;

AdjWePEAvail be the Adjusted Weekly PE Availability;

WePEUnavailDA, WePEUnavailUFM and WePEUnavailUD be the Weekly Unavailability in association with relevant Day Ahead Unavailability, Undeclared Force Majeure Unavailability and Undeclared Unavailability determined in Paragraphs 1.2.1(A), 1.2.2(A) and 1.2.3(B) of Part II of this Schedule 3; and

WePEUnavailWS be Weekly Unavailability in association with Water Supply Limitation that occurs in respect of the PE Period for such given week determined in Paragraph 1.3 of Part II of this Schedule 3;

WePEUnavailTL be Weekly Unavailability in association with Tailwater Level Limitation that occurs in respect of the PE Period for such given week determined in Paragraph 1.4 of Part II of this Schedule 3;

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Then:  $\text{AdjWePEAvail} = \text{RecPEAvail} - \text{WePEUnavailDA} -$   
 $\text{WePEUnavailUFM} - \text{WePEUnavailUD} -$   
 $\text{WePEUnavailWS} - \text{WePEUnavailTL}$

### 1.5.2 Determination of Adjusted Weekly SE Availability

Let: RecSEAvail be the reconciled value of the Weekly SE Availability determined in Paragraph 1.1 of Part II of this Schedule 3;

AdjWeSEAvail be the Adjusted Weekly SE Availability;

WeSEUnavailDA, WeSEUnavailUFM and WeSEUnavailUD be the Weekly Unavailability in association with relevant Day Ahead Unavailability, Undeclared Force Majeure Unavailability and Undeclared Unavailability determined in the Paragraphs 1.2.1(B), 1.2.2(B), and 1.2.3(C) of Part II of this Schedule 3; and

WeSEUnavailWS be Weekly Unavailability in association with Water Supply Limitation that occurs in respect of the SE Period for such given week determined in Paragraph 1.3 of Part II of this Schedule 3;

WeSEUnavailTL be Weekly Unavailability in association with Tailwater Level Limitation that occurs in respect of the SE Period for such given week determined in Paragraph 1.4 of Part II of this Schedule 3;

Then:  $\text{AdjWeSEAvail} = \text{RecSEAvail} - \text{WeSEUnavailDA} -$   
 $\text{WeSEUnavailUFM} - \text{WeSEUnavailUD} -$   
 $\text{WeSEUnavailWS} - \text{WeSEUnavailTL}$

### 1.5.3 Determination of Adjusted Weekly EE Availability

Let: RecEEAvail be the reconciled value of the Weekly EE Availability determined in Paragraph 1.1 of Part II of this Schedule 3; and

AdjWeEEAvail be the Adjusted Weekly EE Availability of the relevant week;

Then:  $\text{AdjWeEEAvail} = \text{RecEEAvail}$

## 2 Derived Declaration

### 2.1 Adjustment of Derived Declaration in respect of Machine Unavailability

#### 2.1.1 Adjustment of Derived Declaration due to Pre Declared Unavailability

(A) Daily Unavailability associated with Pre Declared Unavailability in respect of a given day

In respect of a particular type of Unavailability defined in Section 3.7.2(A) and a given day, the “**Daily Unavailability**” shall be defined as the total amount of Unavailability associated therewith that occurs for the whole day.

The Energy Availability determined on the basis of the Daily Declared Capacity in respect of any day shall be reduced by any and all Daily Unavailability in association with Pre Declared Unavailability that occurs during any time of the relevant day.

Let: DaiUnavailPD be the Daily Unavailability in association with Pre Declared Unavailability that occurs during any time in that relevant day;

DaiGenShortPD(k) be the Generation Shortfall during the PD Period k, such Generation Shortfall being solely associated with the applicable Pre Declared Unavailability and determined in accordance with Paragraph 3.2.1(b)(1) of Part I of this Schedule 3; and

DaiDurPD(k) be the number of Settlement Periods comprised in the PD Period k of the relevant day;

Then:  $\text{DaiUnavailPD} = \sum [\text{DaiGenShortPD}(k) \times \text{DaiDurPD}(k)]$

Where summation is taken for all Pre Declared Unavailability Periods comprised in that relevant day.

(B) Daily Unavailability associated with Pre Declared Unavailability in respect of the PE Period

The Energy Availability determined on the basis of the Daily Declared Capacity in respect of the PE Period of any Weekday shall be reduced by any and all Daily Unavailability in association with Pre Declared Unavailability that occurs during the PE Period of the relevant Weekday.

Let: PEGenShortPD(k) be the Generation Shortfall in respect of the Settlement Period k comprised in the PE Period of the relevant Weekday, such Generation Shortfall being solely associated with the applicable Pre Declared Unavailability and determined in accordance with Paragraph 3.2.1(b)(1) of Part I of this Schedule 3;

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PEDurPD(k) be the number of such relevant Settlement Periods comprised in the PE Period of the relevant Weekday that is associated with the applicable Pre Declared Unavailability; and

DePEUnavailPD be the Daily Unavailability in association with Pre Declared Unavailability that occurs during the PE Period of the relevant Weekday;

$$\text{Then: DePEUnavailPD} = \sum [\text{PEGenShortPD}(k) \times \text{PEDurPD}(k)]$$

Where summation is taken for all Settlement Periods comprised in the PE Period of the relevant Weekday.

### 2.1.2 Adjustment of Derived Declaration due to Undeclared Force Majeure Unavailability

#### (A) Daily Unavailability associated with Undeclared Force Majeure Unavailability in respect of a given day

The Energy Availability determined on the basis of the Daily Declared Capacity in respect of any day shall be reduced by any and all Daily Unavailability in association with Undeclared Force Majeure Unavailability that occurs during any time of the relevant day.

Let: DaiUnavailUFM be the Daily Unavailability in association with Undeclared Force Majeure Unavailability that occurs during any time in that relevant day;

DaiGenShortUFM(k) be the Generation Shortfall of the Facility during the UMD Periods comprised in the relevant day, such Generation Shortfall being solely associated with the applicable Undeclared Force Majeure Unavailability and determined in accordance with Paragraph 3.2.1(b)(4) of Part I of this Schedule 3;

DaiDurUFM(k) be the number of Settlement Periods comprised in the UFM Period k of the relevant day; and

$$\text{Then: DaiUnavailUFM} = \sum [\text{DaiGenShortUFM}(k) \times \text{DaiDurUFM}(k)]$$

Where summation is taken for all UFM Periods comprised in that relevant day.

#### (B) Daily Unavailability associated with Undeclared Force Majeure Unavailability in respect of the PE Period

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The Energy Availability determined on the basis of the Daily Declared Capacity in respect of the PE Period of any Weekday shall be reduced by any and all Daily Unavailability in association with Undeclared Force Majeure Unavailability that occurs during the PE Period of the relevant Weekday.

Let: PEGenShortUFM(k) be the Generation Shortfall of the Facility in respect of the Settlement Period k comprised in the PE Period of the relevant Weekday, such Generation Shortfall being solely associated with the applicable Undeclared Force Majeure Unavailability and determined in accordance with Paragraph 3.2.1(b)(4) of Part I of this Schedule 3;

PEDurUFM(k) be the number of such relevant Settlement Periods comprised in the PE Period of the relevant Weekday that is associated with the applicable Undeclared Force Majeure Unavailability; and

DePEUnavailUFM be the Daily Unavailability in association with all Undeclared Force Majeure Unavailability that occurs during the PE Period of that relevant day;

Then:  $DePEUnavailUFM = \sum [PEGenShortUFM(k) \times PEDurUFM(k)]$

Where summation is taken for all Settlement Periods comprised in the PE Period of the relevant Weekday.

### 2.1.3 Adjustment of Derived Declaration due to Undeclared Unavailability

#### (A) Daily Unavailability associated with Undeclared Unavailability in respect of a given day

The Energy Availability determined on the basis of the Daily Declared Capacity in respect of any day shall be reduced by any and all Daily Unavailability in association with Undeclared Unavailability that occurs during any time of the relevant day.

Let: DaiUnavailUD be the Daily Unavailability in association with Undeclared Unavailability that occurs during any time in that relevant day;

DaiGenShortUD(k) be the Generation Shortfall of the Facility during the UD Periods comprised in the relevant day, such Generation Shortfall being solely associated with the applicable Undeclared Unavailability and determined in accordance with Paragraph 3.2.1(b)(5) of Part I of this Schedule 3;

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DaiDurUD(k) be the number of Settlement Periods comprised in the UD Period k of the relevant day; and

Then:  $\text{DaiUnavailUD} = \sum [\text{DaiGenShortUD}(k) \times \text{DaiDurUD}(k)]$

Where summation is taken for all UD Periods comprised in that relevant day.

(B) Daily Unavailability associated with Undeclared Unavailability in respect of the PE Period

The Energy Availability determined on the basis of the Daily Declared Capacity in respect of the PE Period of any Weekday shall be reduced by any and all Daily Unavailability in association with Undeclared Unavailability that occurs during the PE Period of the relevant Weekday.

Let: PEGenShortUD(k) be the Generation Shortfall of the Facility in respect of the Settlement Period k comprised in the PE Period of the relevant Weekday, such Generation Shortfall being solely associated with the applicable Undeclared Unavailability and determined in accordance with Paragraph 3.2.1(b)(5) of Part I of this Schedule 3;

PEDurUD(k) be the number of such relevant Settlement Periods comprised in the PE Period of the relevant Weekday that is associated with the applicable Undeclared Unavailability; and

DePEUnavailUD be the Daily Unavailability in association with all Undeclared Unavailability that occurs during the PE Period of that relevant day;

Then:  $\text{DePEUnavailUD} = \sum [\text{PEGenShortUD}(k) \times \text{PEDurUD}(k)]$

Where summation is taken for all Settlement Periods comprised in the PE Period of the relevant Weekday.

## 2.2 Determination of Daily Energy Limitation

### 2.2.1 Determination of the Daily Machine Unavailability Limited Energy

The “**Daily Machine Unavailability Limited Energy**” for the relevant day shall be calculated as follows:

Let: DaiDecGen be the Daily Declared Capacity;

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WeDecGen be the Weekly Declared Capacity for the relevant week;

EffDecGen be the Effective Declared Capacity for the relevant days comprised in the given week;

DaiUnavailPD be the Daily Unavailability in association with Pre Declared Unavailability that occurs during any time in that relevant day determined in Paragraph 2.1.1(A) of Part II of Schedule 3;

DaiUnavailUFM be the Daily Unavailability in association with Undeclared Force Majeure Unavailability that occurs during any time in that relevant day determined in Paragraph 2.1.2(A) of Part II of Schedule 3;

DaiUnavailUD be the Daily Unavailability in association with Undeclared Unavailability that occurs during any time in that relevant day determined in Paragraph 2.1.3(A) of Part II of Schedule 3; and

DaiMaUnavailLimEn be the Daily Machine Unavailability Limited Energy;

Then:  $\text{EffDecGen} = \text{Min}(\text{DaiDecGen}, \text{WeDecGen})$

$$\text{DaiMaUnavailLimEn} = (\text{EffDecGen} \times 24) - \text{DaiUnavailPD} - \text{DaiUnavailUFM} - \text{DaiUnavailUD}$$

2.2.2 Determination of the Daily Machine Unavailability Limited Primary Energy and the Daily Machine Unavailability Limited Secondary Energy

Let: WDaiDecGen be the Daily Declared Capacity for the relevant Weekday;

WeDecGen be the Weekly Declared Capacity for the relevant week;

WEffDecGen be the Effective Declared Capacity for the relevant Weekdays comprised in the given week;

DePEUnavailPD, DePEUnavailUFM and DePEUnavailUD be respective Daily Unavailability in association with relevant Pre Declared Unavailability, Undeclared Force Majeure Unavailability and Undeclared Unavailability, respectively determined in Paragraphs 2.1.1(B), 2.1.2(B) and 2.1.3(B) of Part II of this Schedule 3;

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DaiMaUnavailLimEn be the Daily Machine Unavailability Limited Energy determined in Paragraph 2.2.1 of Part II of Schedule 3;

DaiMaUnavailLimPE be the Daily Machine Unavailability Limited Primary Energy; and

DaiMaUnavailLimSE be the Daily Machine Unavailability Limited Secondary Energy;

Then:  $WEffDecGen = \text{Min} (WDaiDecGen, WeDecGen)$

$$DaiMaUnavailLimPE = (WEffDecGen \times 16) - DePEUnavailPD - DePEUnavailUFM - DePEUnavailUD$$

$$DaiMaUnavailLimSE = DaiMaUnavailLimEn - DaiMaUnavailLimPE$$

### 2.2.3 Determination of the Daily Unavailability associated with a Water Supply Limitation for the relevant day

The Daily Unavailability associated with a Water Supply Limitation that occurs in accordance with Section 3.6.7 for the PE Period and the SE Period of a given day shall be calculated as follows:

Let: DaiPEUnavailWS be the Daily Unavailability in association with Water Supply Limitation that occurs in respect of the PE Period of a relevant day (the “Daily Water Supply Unavailability Limited Primary Energy”);

DaiSEUnavailWS be the Daily Unavailability in association with Water Supply Limitation that occurs in respect of the SE Period of a relevant day (the “Daily Water Supply Unavailability Limited Secondary Energy”);

DaiMaUnavailLimPE be the Daily Machine Unavailability Limited Primary Energy determined in accordance with Paragraph 2.2.2 of Part II of Schedule 3; and

DaiMaUnavailLimSE be the Daily Machine Unavailability Limited Secondary Energy determined in accordance with Paragraph 2.2.2 of Part II of Schedule 3;

ActWaSupLimPE be the maximum amount of electrical energy that is achievable upon EGAT’s Dispatch during the PE Period of the relevant day pursuant to the effects of both Machine Outages and Water Supply Limitation occurring in the PE Period of that day; and

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ActWaSupLimSE be the maximum amount of electrical energy that is achievable upon EGAT's Dispatch during the SE Period of the relevant day pursuant to the effects of both Machine Outages and Water Supply Limitation occurring in the SE Period of that day;

Then: DaiPEUnavailWS  
= Max [(DaiMaUnavailLimPE – ActWaSupLimPE), 0]

DaiSEUnavailWS  
= Max [(DaiMaUnavailLimSE – ActWaSupLimSE), 0]

Depending on the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Water Supply Limitation, if any, the values of DaiPEUnavailWS and DaiSEUnavailWS determined in Paragraph 2.2.3 of Part II of this Schedule 3 shall be used as Forced Outage PE Unavailability, Forced Outage SE Unavailability, Short Notice Outage PE Unavailability, Short Notice Outage SE Unavailability, Maintenance Outage PE Unavailability or Maintenance Outage SE Unavailability for the purposes of applying Sections 9.6.2, 9.6.3 or 9.6.4, as applicable.

#### 2.2.4 Determination of the Daily Unavailability associated with a Tailwater Level Limitation for the relevant day

The Daily Unavailability associated with a Tailwater Level Limitation that occurs in accordance with Section 3.6.7 for the PE Period and the SE Period of a given day shall be calculated as follows:

Let: DaiPEUnavailTL be the Daily Unavailability in association with Tailwater Level Limitation that occurs in respect of the PE Period of a relevant day (the “Daily Tailwater Level Unavailability Limited Primary Energy”);

DaiSEUnavailTL be the Daily Unavailability in association with Tailwater Level Limitation that occurs in respect of the SE Period of a relevant day (the “Daily Tailwater Level Unavailability Limited Secondary Energy”);

DaiMaUnavailLimPE be the Daily Machine Unavailability Limited Primary Energy determined in accordance with Paragraph 2.2.2 of Part II of Schedule 3; and

DaiMaUnavailLimSE be the Daily Machine Unavailability Limited Secondary Energy determined in accordance with Paragraph 2.2.2 of Part II of Schedule 3;

ActTaLevLimPE be the maximum amount of electrical energy that is achievable upon EGAT's Dispatch during the PE Period

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of the relevant day pursuant to the effects of both Machine Outages and Tailwater Level Limitation occurring in the PE Period of that day; and

ActTaLevLimSE be the maximum amount of electrical energy that is achievable upon EGAT's Dispatch during the SE Period of the relevant day pursuant to the effects of both Machine Outages and Tailwater Level Limitation occurring in the SE Period of that day;

Then:  $DaiPEUnavailTL$   
 $= \text{Max} [(DaiMaUnavailLimPE - ActTaLevLimPE), 0]$

$DaiSEUnavailTL$   
 $= \text{Max} [(DaiMaUnavailLimSE - ActTaLevLimSE), 0]$

Depending on the time that the Generator notifies EGAT of the respective Unavailability associated with the relevant Tailwater Level Limitation, if any, the values of  $DaiPEUnavailTL$  and  $DaiSEUnavailTL$  determined in Paragraph 2.2.4 of Part II of this Schedule 3 shall be used as Forced Outage PE Unavailability, Forced Outage SE Unavailability, Short Notice Outage PE Unavailability, Short Notice Outage SE Unavailability, Maintenance Outage PE Unavailability or Maintenance Outage SE Unavailability for the purposes of applying Sections 9.6.2, 9.6.3 or 9.6.4, as applicable.

### 2.3 Determination of the Weekly Derived PE Availability, the Weekly Derived SE Availability and the Weekly Derived EE Availability

In respect of each week in a Contract Year the Weekly Derived PE Availability, the Weekly Derived SE Availability and the Weekly Derived EE Availability shall be determined as follows:

#### 2.3.1 Determination of the effect of the Week Ahead Unavailability upon the Weekly Derived PE Availability

The Weekly Derived PE Availability in respect of any week in a Contract Year shall be determined on the basis of the Daily Declared Capacity taking into account the effect of any and all Week Ahead Unavailability that occurs during the PE Period of the relevant Weekdays comprised in such week.

Let: "PE-WA Period" be the portion of time defined in Paragraph 3.2.3(1)(a) of Part I of this Schedule 3;

PEGenShortWA(k) be the Generation Shortfall of the Facility during the PE-WA Period k of the relevant Weekday, such Generation Shortfall being solely associated with the applicable

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Week Ahead Unavailability and determined in accordance with Paragraph 3.2.1(b)(2) of Part I of this Schedule 3;

PEDurWA(k) be the number of Settlement Periods comprised in the PE-WA Period k; and

WeDePEUnavailWA be the Weekly Unavailability in association with all Week Ahead Unavailability that occurs during the PE-WA Period in the given week;

Then:  $WeDePEUnavailWA = \sum [PEGenShortWA(k) \times PEDurWA(k)]$

Where summation is taken for all PE-WA Periods comprised in such week.

### 2.3.2 Determination of the effect of the Week Ahead Unavailability upon the Weekly Derived SE Availability

The Weekly Derived SE Availability in respect of any week in a Contract Year shall be determined on the basis of the Daily Declared Capacity taking into account the effect of any and all Week Ahead Unavailability that occurs during the SE Period of the relevant days comprised in such week.

Let: “SE-WA Period” be the portion of time defined in Paragraph 3.2.3(2)(a) of Part I of this Schedule 3;

SEGenShortWA(k) be the Generation Shortfall of the Facility during the SE-WA Period k of the relevant day, such Generation Shortfall being solely associated with the applicable Week Ahead Unavailability and determined in accordance with Paragraph 3.2.1(b)(2) of Part I of this Schedule 3;

SEDurWA(k) be the number of Settlement Periods comprised in the SE-WA Period k; and

WeDeSEUnavailWA be the Weekly Unavailability in association with all Week Ahead Unavailability that occurs during the SE-WA Period in the given week;

Then:  $WeDeSEUnavailWA = \sum [SEGenShortWA(k) \times SEDurWA(k)]$

Where summation is taken for all SE-WA Periods comprised in such week.

### 2.3.3 Determination of the Weekly Derived PE Availability

Let: WDaiDecGen be the Daily Declared Capacity for the relevant Weekdays comprised in the given week;

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WeDecGen be the Weekly Declared Capacity for the relevant week;

WEffDecGen be the Effective Declared Capacity for the relevant Weekdays comprised in the given week;

WeDePEAvail be the Weekly Derived PE Availability; and

WeDePEUnavailWA be the Weekly Unavailability in association with relevant Week Ahead Unavailability that occurs during the PE-WA Period in the given week determined in Paragraph 2.3.1 of Part II of this Schedule 3;

Then:  $WEffDecGen = \text{Min} (WDaiDecGen, WeDecGen)$

$WeDePEAvail = \sum (WEffDecGen \times 16) - WeDePEUnavailWA$

Where the summation in each case is taken for all Weekdays comprised in such week.

#### 2.3.4 Determination of the Weekly Derived SE Availability

Let: WDaiDecGen be the Daily Declared Capacity for the relevant Weekdays comprised in the given week;

SDaiDecGen be the Daily Declared Capacity for the relevant Sunday comprised in the given week;

WeDecGen be the Weekly Declared Capacity for the relevant week; WEffDecGen be the Effective Declared Capacity for the relevant Weekdays comprised in the given week;

SEffDecGen be the Effective Declared Capacity for the relevant Sunday comprised in the given week; and

WeDeSEAvail be the Weekly Derived SE Availability;

WeDeSEUnavailWA be the Weekly Unavailability in association with relevant Week Ahead Unavailability that occurs during the SE-WA Period in the given week determined in Paragraph 2.3.2 of Part II of this Schedule 3;

Then:  $WEffDecGen = \text{Min} (WDaiDecGen, WeDecGen)$

$SEffDecGen = \text{Min} (SDaiDecGen, WeDecGen)$

$WeDeSEAvail = \sum (WEffDecGen \times 5.35) + (SEffDecGen \times 8) - WeDeSEUnavailWA$

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Where the summation in each case is taken for all Weekdays comprised in such week.

### 2.3.5 Determination of the Weekly Derived EE Availability

Let: DaiDecGen be the Daily Declared Capacity for the relevant days comprised in the given week;

WeDecGen be the Weekly Declared Capacity for the relevant week;

EffDecGen be the Effective Declared Capacity for the relevant days comprised in the given week;

WeDePEAvail be the Weekly Derived PE Availability determined in Paragraph 2.3.3 of Part II of this Schedule 3;

WeDeSEAvail be the Weekly Derived SE Availability determined in Paragraph 2.3.4 of Part II of this Schedule 3; and

WeDeEEAvail be the Weekly Derived EE Availability;

Then:  $\text{EffDecGen} = \text{Min}(\text{DaiDecGen}, \text{WeDecGen})$

$$\text{WeDeEEAvail} = \sum (\text{EffDecGen} \times 24) - \text{WeDePEAvail} - \text{WeDeSEAvail}$$

Where the summation is taken for all days comprised in such week.

## 3 Final Declaration

### 3.1 **Determination of Final Declaration prior to any adjustment in respect of Coordinated Line Maintenance Outage**

The temporary value of the Final Declaration of each Energy Component shall be determined as follows:

Let: TempFinPEAvail be the temporary value of the Final PE Availability prior to any adjustment made in accordance with Paragraph 3.2 of Part II of Schedule 3;

TempFinSEAvail be the temporary value of the Final SE Availability prior to any adjustment made in accordance with Paragraph 3.2 of Part II of Schedule 3; and

TempFinEEAvail be the temporary value of the Final Excess Availability prior to any adjustment made in accordance with Paragraph 3.2 of Part II of Schedule 3;

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AdjWePEAvail, AdjWeSEAvail and AdjWeEEAvail are values determined in Paragraphs 1.5.1, 1.5.2 and 1.5.3 of Part II of this Schedule 3, respectively; and

$$\begin{aligned} \text{Then: TempFinPEAvail} &= \text{AdjWePEAvail} \\ \text{TempFinSEAvail} &= \text{AdjWeSEAvail} \\ \text{TempFinEEAvail} &= \text{AdjWeEEAvail} \end{aligned}$$

During the period prior to making any adjustment in accordance with Paragraph 3.2 of Part II of Schedule 3, such temporary values of Final PE Availability, Final SE Availability and Final EE Availability shall be used as the respective values of such Final Declaration for the purpose of the determination of various quantities in Schedule 4, as applicable.

**3.2 Adjustment of Final Declaration in respect of Coordinated Line Maintenance Outage or outage of either or both transmission circuits of the Transmission Line due to causes that can be attributable to neither EGAT nor the Generator**

In respect of a given week  $w$ , in the event that:

- (i) Weekly Dispatch Shortfall Energy occurs at the end of such week  $w$  prior to any adjustment made in accordance with this Paragraph 3.2 of Part II of Schedule 3, as determined in accordance with Paragraph 3(b)(A) of Schedule 4; and
- (ii) either:
  - (1) Coordinated Line Maintenance Outage occurs in such week  $w$ ; or
  - (2) there is outage of either or both transmission circuits of the Transmission Line due to causes that can be attributable to neither EGAT nor the Generator, including such cases provided in Sections 3.9.3(c) and 3.9.4(e);

then the temporary value of the Final PE Availability and the Final SE Availability determined in accordance with Paragraph 3.1 of Part II of Schedule 3 shall be adjusted as follows:

Let: WeDSPE and WeDSSE be the Primary Energy and Secondary Energy comprised in the Weekly Dispatch Shortfall Energy for the relevant week determined in accordance with Paragraph 3(b)(A) of Schedule 4;

WeCoLinPEUnavail be the Weekly Unavailability that is associated with all Coordinated Line Maintenance Outages or outages of either or

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both transmission circuits of the Transmission Line due to causes that can be attributable to neither EGAT nor the Generator that occurs during the PE Periods in such week w;

WeCoLinSEUnavail be the Weekly Unavailability that is associated with all Coordinated Line Maintenance Outages or outages of either or both transmission circuits of the Transmission Line due to causes that can be attributable to neither EGAT nor the Generator that occurs during the SE Periods in such week w;

AdjCoLinPE be the adjustment to be made to the temporary value of the Final PE Availability due to the effect of such Coordinated Line Maintenance Outages or outages of either or both transmission circuits of the Transmission Line due to causes that can be attributable to neither EGAT nor the Generator; and

AdjCoLinSE be the adjustment to be made to the temporary value of the Final SE Availability due to the effect of such Coordinated Line Maintenance Outages or outages of either or both transmission circuits of the Transmission Line due to causes that can be attributable to neither EGAT nor the Generator;

Then:  $\text{AdjCoLinPE} = \text{Min}(\text{WeDSPE}, \text{WeCoLinPEUnavail})$

$\text{AdjCoLinSE} = \text{Min}(\text{WeDSSE}, \text{WeCoLinSEUnavail})$

### **3.3 Determination of the Final Declaration pursuant to any adjustment due to the effects of Coordinated Line Maintenance Outages or outage of either or both transmission circuits of the Transmission Line due to causes that can be attributable to neither EGAT nor the Generator**

Let: TempFinPEAvail, TempFinSEAvail and TempFinEEAvail be the temporary values of the Final PE Availability, the Final SE Availability and the Final EE Availability determined in accordance with Paragraph Part II of 3.1 of Schedule 3;

FinPEAvail be the Final PE Availability taking into account any adjustment made in accordance with Paragraph 3.2 of Part II of Schedule 3;

FinSEAvail be the Final SE Availability taking into account any adjustment made in accordance with Paragraph 3.2 of Part II of Schedule 3;

FinEEAvail be the Final EE Availability taking into account any adjustment made in accordance with Paragraph 3.2 of Part II of Schedule 3; and

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AdjCoLinPE and AdjCoLinSE be the adjustment to be made to the temporary values of the Final PE Availability and the Final SE Availability due to the effect of Coordinated Line Maintenance Outages or outages of either or both transmission circuits of the Transmission Line due to causes that can be attributable to neither EGAT nor the Generator, respectively, as determined in accordance with Paragraph 3.2 of Part II of Schedule 3;

$$\text{Then: FinPEAvail} = \text{TempFinPEAvail} - \text{AdjCoLinPE}$$

$$\text{FinSEAvail} = \text{TempFinSEAvail} - \text{AdjCoLinSE}$$

$$\text{FinEEAvail} = \text{TempFinEEAvail}$$

### 3.4 Final PE Availability, Final SE Availability and Final EE Availability during the MU-AD Period

There shall be no determination of the Final Declaration during the MU-AD Period.

For the purposes of the determinations referred to in Schedules 3, 4 and 5 during the MU-AD Period where the values of Final PE Availability, Final SE Availability and/or Final EE Availability are required, such values shall be defined as follows:

- (a) For the purposes of the determinations of the Weekly Declared EC Percentage as set out in Paragraph 5 of Part II of Schedule 3,

$$\text{Final PE Availability} = 4,299 \text{ GWh}$$

$$\text{Final SE Availability} = 1,410 \text{ GWh}$$

$$\text{Final EE Availability} = 1,220 \text{ GWh}$$

- (b) For the purposes of all other calculations referred to in Schedules 3, 4 and 5, the values of Final PE Availability, Final SE Availability and/or Final EE Availability shall be defined as zero (0).

## 4 Determination of Weekly Additional Energy Availability

Let: DAdPEAvail be the Daily Additional PE Availability Declared by the Generator for a given day comprised in the relevant week w in accordance with Paragraph 1.3 of Part 1 of this Schedule 3;

DAdSEAvail be the Daily Additional SE Availability Declared by the Generator for a given day comprised in the relevant week w in accordance with Paragraph 1.3 of Part 1 of this Schedule 3;

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DAdEEAvail be the Daily Additional EE Availability Declared by the Generator for a given day comprised in the relevant week  $w$  in accordance with Paragraph 1.3 of Part 1 of this Schedule 3;

WAdPEAvail<sub>w</sub> be the Weekly Additional PE Availability for the relevant week;

WAdSEAvail<sub>w</sub> be the Weekly Additional SE Availability for the relevant week;

WAdEEAvail<sub>w</sub> be the Weekly Additional EE Availability for the relevant week;

Then:  $WAdPEAvail_w = \sum DAdPEAvail$

$WAdSEAvail_w = \sum DAdSEAvail$

$WAdEEAvail_w = \sum DAdEEAvail$

Where the summation in each case is taken for all days comprised in such week  $w$ .

#### 5. Weekly Declared EC Percentage and Weekly Declared Additional EC Percentage

Pursuant to the Declaration Procedures, subject to Section 4.6 and Paragraph 3.4 of Part II of Schedule 3, the Parties shall establish the percentages of various Energy Components in respect of the Generator's Declaration, as follows:

##### A. Weekly Declared EC Percentage

Let:  $j$  be the subscript that characterizes a given Contract Year  $j$ ;

$w$  be the subscript that characterizes a week comprised in the Contract Year  $j$ ;

WeDecPEPer<sub>w</sub> be the "**Weekly Declared PE Percentage**" for week  $w$  comprised in a Contract Year  $j$ ;

WeDecSEPer<sub>w</sub> be the "**Weekly Declared SE Percentage**" for week  $w$  comprised in a Contract Year  $j$ ;

WeDecEEPer<sub>w</sub> be the "**Weekly Declared EE Percentage**" for week  $w$  comprised in a Contract Year  $j$ ;

FinPEAvail<sub>w</sub>, FinSEAvail<sub>w</sub> and FinEEAvail<sub>w</sub> be the respective values defined and determined in Paragraph 3.3 of Part II of this Schedule 3 for week  $w$  comprised in a Contract Year  $j$ ; and

FinToAvail<sub>w</sub> be the sum of FinPEAvail<sub>w</sub>, FinSEAvail<sub>w</sub> and FinEEAvail<sub>w</sub>;

Then:  $FinToAvail_w = FinPEAvail_w + FinSEAvail_w + FinEEAvail_w$

**Schedule 4****ENERGY COMPONENTS PURSUANT TO DISPATCH AND DELIVERY**

This Schedule 4 contains the procedures for determining, in respect of each week after the Commercial Operation Date, the Energy Components comprised in various amounts of electrical energy, being referenced at the Delivery Point, that have occurred pursuant to and are classified in accordance with: (i) the delivery of electrical energy to the EGAT System pursuant to EGAT's Dispatch; and (ii) the Declaration made by the Generator in accordance with Section 3 and Schedule 3. A summary of the Accounts referred to in the Agreement is provided in Paragraph 9 of this Schedule 4.

For the avoidance of doubt, notwithstanding the definitions of the PE Period and the SE Period, the determination of Energy Components comprised in any amount of electrical energy pursuant to EGAT's Dispatch and the delivery thereof to the EGAT System shall depend on neither the particular pattern of EGAT's Dispatch nor the distribution that various portions of such amount of electrical energy has been actually delivered to the EGAT System in the PE Period and the SE Period.

**1 Determination of Weekly Supply and Monthly Supply****(a) Determination of Weekly Supply**

The "**Weekly Supply**" of each Energy Component for a given week shall, subject to Section 4.6 and Paragraph 3.4 of Part II of Schedule 3, be calculated as follows:

**(i) For the week that is not an EGAT Affected FM Week**

Let:  $j$  be the subscript that characterizes the Contract Year  $j$ ;

$w$  be the subscript that characterizes a week comprised in the Contract Year  $j$ ;

$FinPEAvail_w$  be the Final Declaration for Primary Energy for a given week  $w$  comprised in Contract Year  $j$ , as defined in Paragraph 3.3 of Part II of Schedule 3;

$FinSEAvail_w$  be the Final Declaration for Secondary Energy for a given week  $w$  comprised in Contract Year  $j$ , as defined in Paragraph 3.3 of Part II of Schedule 3;

$WeEE_w$  be the Weekly Excess Energy for a given week  $w$  comprised in Contract Year  $j$ , as defined in Paragraph 4(c) of Schedule 4;

$WeAdPE_w$  be the Primary Energy comprised in the Weekly Additional Energy for such week  $w$  defined in Paragraph 5(d) of this Schedule 4;

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WeAdSE<sub>w</sub> be the Secondary Energy comprised in the Weekly Additional Energy for such week w defined in Paragraph 5(d) of this Schedule 4;

WeAdEE<sub>w</sub> be the Excess Energy comprised in the Weekly Additional Energy for such week w defined in Paragraph 5(d) of this Schedule 4;

WePESup<sub>w</sub> be the Weekly Supply for Primary Energy for such week;

WeSESup<sub>w</sub> be the Weekly Supply for the Secondary Energy for such week w; and

WeEESup<sub>w</sub> be the Weekly Supply for the Excess Energy for such week w;

$$\text{Then: WePESup}_w = \text{FinPEAvail}_w + \text{WeAdPE}_w$$

$$\text{WeSESup}_w = \text{FinSEAvail}_w + \text{WeAdSE}_w$$

$$\text{WeEESup}_w = \text{WeEE}_w + \text{WeAdEE}_w$$

For the purposes of calculating the Monthly Energy Payment as provided in Schedule 5 in respect of the MU-SO Period, the values of WePESup<sub>w</sub> and WeSESup<sub>w</sub> determined above shall be deducted by the values of WeSOPE<sub>w</sub> and WeSOSE<sub>w</sub> determined in accordance with Paragraph 8(b) of Schedule 4, respectively.

**(ii) For the week that is an EGAT Affected FM Week**

Let: WePESup<sub>w</sub>, WeSESup<sub>w</sub>, WeEESup<sub>w</sub>, FinPEAvail<sub>w</sub>, FinSEAvail<sub>w</sub>, WeEE<sub>w</sub>, WeAdPE<sub>w</sub>, WeAdSE<sub>w</sub> and WeAdEE<sub>w</sub> be the values defined in Paragraph 1 of this Schedule 4;

WeFMDSPE<sub>w</sub> be the Primary Energy comprised in the Weekly Force Majeure Dispatch Shortfall Energy for the relevant week w determined in accordance with Paragraph 2(b)(B) of Schedule 10; and

WeFMDSSE<sub>w</sub> be the Secondary Energy comprised in the Weekly Force Majeure Dispatch Shortfall Energy for the relevant week w determined in accordance with Paragraph 2(b)(B) of Schedule 10;

$$\text{Then: WePESup}_w = \text{FinPEAvail}_w + \text{WeAdPE}_w - \text{WeFMDSPE}_w$$

$$\text{WeSESup}_w = \text{FinSEAvail}_w + \text{WeAdSE}_w - \text{WeFMDSSE}_w$$

$$\text{WeEESup}_w = \text{WeEE}_w + \text{WeAdEE}_w$$

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(b) Determination of Month End Supply

Let:  $j$  be the subscript that characterizes the Contract Year  $j$ ;

$m$  be the subscript that characterizes a month comprised in the Contract Year  $j$ ;

$MoEndPESup_m$  be the Month End Supply for Primary Energy for a given month  $m$  comprised in Contract Year  $j$ ;

$MoEndSESup_m$  be the Month End Supply for Secondary Energy for a given month  $m$  comprised in Contract Year  $j$ ;

$WePEAvail$ ,  $WeSEAvail$  and  $WeEEAvail$  be the Weekly PE Availability, Weekly SE Availability and Weekly EE Availability Declared by the Generator in accordance with this Schedule 3; and

$MoEndNo$  be the number of days comprised in the relevant Month End Period;

$$\text{Then: } MoEndPESup_m = MoEndNo * WePEAvail / 7$$

$$MoEndSESup_m = MoEndNo * WeSEAvail / 7$$

$$MoEndEESup_m = MoEndNo * WeEEAvail / 7$$

(c) Determination of Month Start Supply

Let:  $j$  be the subscript that characterizes the Contract Year  $j$ ;

$m$  be the subscript that characterizes a month comprised in the Contract Year  $j$ ;

$MoStartPESup_m$  be the Month Start Supply for Primary Energy for a given month  $m$  comprised in Contract Year  $j$ ;

$MoStartSESup_m$  be the Month Start Supply for Secondary Energy for a given month  $m$  comprised in Contract Year  $j$ ;

$MoStartEESup_m$  be the Month Start Supply for Excess Energy for a given month  $m$  comprised in Contract Year  $j$ ;

$MoEndPESup_{m-1}$ ,  $MoEndSESup_{m-1}$  and  $MoEndEESup_{m-1}$  be the Month End Supply for Primary Energy, Secondary Energy and Excess Energy, respectively, for the immediately preceding month of such given month  $m$ , determined in accordance with Paragraph 1(b) of this Schedule 4;

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OWePESup<sub>m</sub>, OWeSESup<sub>m</sub> and OWeEESup<sub>m</sub> be the Weekly Supply for Primary Energy, Secondary Energy and Excess Energy, respectively, for the Overlapping Week associated with the beginning part of such given month m, determined in accordance with Paragraph 1(a) of this Schedule 4; and

$$\text{Then: MoStartPESup}_m = \text{OWePESup}_m - \text{MoEndPESup}_{m-1}$$

$$\text{MoStartSESup}_m = \text{OWeSESup}_m - \text{MoEndSESup}_{m-1}$$

$$\text{MoStartEESup}_m = \text{OWeEESup}_m - \text{MoEndEESup}_{m-1}$$

(d) Determination of Monthly Supply

Let: j be the subscript that characterizes the Contract Year j;

m be the subscript that characterizes a month comprised in the Contract Year j;

MoPESup<sub>m</sub> be the Month Supply for Primary Energy for a given month m comprised in Contract Year j;

MoSESup<sub>m</sub> be the Month Supply for Secondary Energy for a given month m comprised in Contract Year j;

MoEESup<sub>m</sub> be the Month Supply for Excess Energy for a given month m comprised in Contract Year j;

MoEndPESup<sub>m</sub>, MoEndSESup<sub>m</sub> and MoEndEESup<sub>m</sub> be the Month End Supply for Primary Energy, Secondary Energy and Excess Energy, respectively, for a given month m comprised in Contract Year j, determined in accordance with Paragraph 1(b) of this Schedule 4;

MoStartPESup<sub>m</sub>, MoStartSESup<sub>m</sub> and MoStartEESup<sub>m</sub> be the Month Start Supply for Primary Energy, Secondary Energy and Excess Energy, respectively, for a given month m comprised in Contract Year j, determined in accordance with Paragraph 1(c) of this Schedule 4; and

NWePESup<sub>w</sub>, NWeSESup<sub>w</sub> and NWeEESup<sub>w</sub> be the Weekly Supply for Primary Energy, Secondary Energy and Excess Energy, respectively, for a given Non Overlapping Week comprised in such given month m, determined in accordance with Paragraph 1(a) of this Schedule 4;

$$\text{Then: MoPESup}_m = \sum \text{NWePESup}_w + \text{MoStartPESup}_m + \text{MoEndPESup}_m$$

$$\text{MoSESup}_m = \sum \text{NWeSESup}_w + \text{MoStartSESup}_m + \text{MoEndSESup}_m$$

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$$\text{MoEESup}_m = \sum \text{NWeEESup}_w + \text{MoStartEESup}_m + \text{MoEndEESup}_m$$

Where each of these summations is taken for all Non Overlapping Weeks comprised in such month m.

## 2 Determination of Annual Settled Energy Target and Monthly Settled Energy Target for each Committed Energy Component

### (a) Annual Settled Energy Target

The “**Annual Settled Energy Target**” in respect of each Committed Energy Component and a given Contract Year shall be determined as follows:

Let: AnPESetTar<sub>j</sub> be the Annual Settled Energy Target for Primary Energy for the given Contract Year j;

AnSESetTar<sub>j</sub> be the Annual Settled Energy Target for Secondary Energy for the given Contract Year j;

AnPESupTar<sub>j</sub> be the Annual Supply Target for Primary Energy for the given Contract Year j, as defined in Section 4.4.1(b);

AnSESupTar<sub>j</sub> be the Annual Supply Target for Secondary Energy for the given Contract Year j, as defined in Section 4.4.1(b);

AccSSPE<sub>j-1</sub> be:

- (i) for j = 1, 0; and
- (ii) for j ≠ 1, the Accumulated Supply Shortfall Primary Energy existing as at the end of the previous Contract Year j – 1, determined in accordance with Paragraph 2(b) of Schedule 5;

AccSSSE<sub>j-1</sub> be:

- (i) for j = 1, 0; and
- (ii) for j ≠ 1, the Accumulated Supply Shortfall Secondary Energy existing as at the end of the previous Contract Year j – 1, determined in accordance with Paragraph 2(b) of Schedule 5; and

j be the subscript that characterizes Contract Year j;

$$\text{Then: AnPESetTar}_j = \text{AnPESupTar}_j + \text{AccSSPE}_{j-1}$$

$$\text{AnSESetTar}_j = \text{AnSESupTar}_j + \text{AccSSSE}_{j-1}$$

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(b) Monthly Settled Energy Target

The “**Monthly Settled Energy Target**” in respect of each Committed Energy Component and a given month of a given Contract Year shall be determined as follows:

Let:  $AnPESetTar_j$  and  $AnSESetTar_j$  be the values determined in Paragraph 2(a) of this Schedule 4;

$MoPESetTar_m$  be the Monthly Settled Energy Target for Primary Energy for month  $m$  of the relevant Contract Year  $j$ ;

$MoSESetTar_m$  be the Monthly Settled Energy Target for Secondary Energy for month  $m$  of the relevant Contract Year  $j$ ;

$MoPESup_{m-1}$  and  $MoSESup_{m-1}$  be the Monthly Supply for respective Committed Energy Component defined in Paragraph 1 of Schedule 4 for the month immediately preceding the given month  $m$ , as applicable;

$j$  be the subscript that characterizes Contract Year  $j$ ;

$m$  be the subscript that characterizes a month comprised in Contract Year  $j$ , being an integer from  $p$  to  $q$  inclusive where each such integer  $p$  and  $q$  represents the order of each calendar month for the respective Contract Year  $j$  (1 = January, 2 = February and so on);

$p$  be: (i) for the first Contract Year comprised in (I) the Relevant Period 1; (II) the Relevant Period 3; or (III) the Relevant Period 5, the integer representing the first month of such first Contract Year; and

(ii) for each Contract Year other than the first Contract Year comprised in any of the Relevant Period 1; the Relevant Period 3; or the Relevant Period 5, 1; and

$q$  be: (i) for each Contract Year other than the last Contract Year comprised in any of the Relevant Period 2; the Relevant Period 4; or the Term, 12; and

(ii) for the last Contract Year comprised in (I) the Relevant Period 2; (II) the Relevant Period 4; or (III) the Term, the integer representing the last month of such last Contract Year;

Then: For each month  $m$  of a given Contract Year  $j$ :

For  $m = p$

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$$\text{MoPESetTar}_m = \text{AnPESetTar}_j$$

$$\text{MoSESetTar}_m = \text{AnSESetTar}_j$$

For  $m = (p + 1)$  to  $q$

$$\text{MoPESetTar}_m = \text{Max} [(\text{MoPESetTar}_{m-1} - \text{MoPESup}_{m-1}), 0]$$

$$\text{MoSESetTar}_m = \text{Max} [(\text{MoSESetTar}_{m-1} - \text{MoSESup}_{m-1}), 0]$$

**3 Determination of Weekly Dispatch Shortfall Energy, Weekly Pre Make-up Additional Energy and Weekly Pre Make-up Excess Energy**

(a) Determination of Weekly Dispatch Shortfall Energy, Weekly Pre Make-Up Additional Energy and Weekly Pre Make-Up Excess Energy

The “**Weekly Dispatch Shortfall Energy**”, the “**Weekly Pre Make-Up Additional Energy**” and the “**Weekly Pre Make-Up Excess Energy**” for a given week  $w$  comprised in a Contract Year shall, subject to Section 4.6 and Paragraph 3.4 of Part II of Schedule 3, be calculated as follows:

**(A) For the week that is not an EGAT Affected FM Week**

Let:  $\text{WeDSEn}_w$  be the Weekly Dispatch Shortfall Energy for both Committed Energy Components for the relevant week  $w$ ;

$\text{WePreMUAdEn}_w$  be the Weekly Pre Make-Up Additional Energy for the relevant week  $w$ ;

$\text{FinPEAvail}_w$  be the Final PE Availability for a given week  $w$  comprised in Contract Year  $j$ , as determined in Paragraph 3.3 of Part II of Schedule 3;

$\text{FinSEAvail}_w$  be the Final SE Availability for a given week  $w$  comprised in Contract Year  $j$ , as determined in Paragraph 3.3 of Part II of Schedule 3;

$\text{FinEEAvail}_w$  be the Final EE Availability for a given week  $w$  comprised in Contract Year  $j$ , as determined in Paragraph 3.3 of Part II of Schedule 3;

$\text{WePreMUEE}_w$  be the Weekly Pre Make-Up Excess Energy for the relevant week  $w$ ; and

$\text{WeNetEn}_w$  be the Net Electrical Energy at the Delivery Point for the relevant week  $w$  determined in Paragraph 3 of Part II of Schedule 7;

Then:  $\text{WeDSEn}_w$

$$= \text{Max} \{[(\text{FinPEAvail}_w + \text{FinSEAvail}_w) - \text{WeNetEn}_w], 0\}$$

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$$\begin{aligned} \text{WePreMUAdEn}_w & \\ &= \text{Max} \{ [\text{WeNetEn}_w - (\text{FinPEAvail}_w + \text{FinSEAvail}_w + \text{FinEEAvail}_w)], \\ & \quad 0 \} \end{aligned}$$

$$\begin{aligned} \text{WePreMUEE}_w & \\ &= \text{Min} \{ \text{Max} [ (\text{WeNetEn}_w - \text{FinPEAvail}_w - \text{FinSEAvail}_w), 0 ], \text{FinEEAvail}_w \} \end{aligned}$$

The Weekly Dispatch Shortfall Energy for both Committed Energy Components that occurs in a given week shall be accumulated into a “**Dispatch Shortfall Energy Account**”, regardless of the respective percentages of Primary Energy and Secondary Energy that are comprised in such Weekly Dispatch Shortfall Energy.

**(B) For the week that is an EGAT Affected FM Week**

Let:  $\text{WeDSEn}_w$ ,  $\text{FinPEAvail}_w$ ,  $\text{FinSEAvail}_w$ ,  $\text{FinEEAvail}_w$ ,  $\text{WePreMUAdEn}_w$ ,  $\text{WePreMUEE}_w$  and  $\text{WeNetEn}_w$  be the values defined in Paragraph 3(a)(A) above;

$$\text{Then: } \text{WeDSEn}_w = 0$$

$$\begin{aligned} \text{WePreMUAdEn}_w & \\ &= \text{Max} \{ [\text{WeNetEn}_w - (\text{FinPEAvail}_w + \text{FinSEAvail}_w + \text{FinEEAvail}_w)], 0 \} \end{aligned}$$

$$\begin{aligned} \text{WePreMUEE}_w & \\ &= \text{Min} \{ \text{Max} [ (\text{WeNetEn}_w - \text{FinPEAvail}_w - \text{FinSEAvail}_w), 0 ], \text{FinEEAvail}_w \} \end{aligned}$$

**(b) Determination of Committed Energy Components comprised in the Weekly Dispatch Shortfall Energy**

The Committed Energy Components comprised in the Weekly Dispatch Shortfall Energy shall be determined by applying the respective Weekly Declared EC Percentage provided in Paragraph 5 of Part II of Schedule 3 to the Weekly Dispatch Shortfall Energy.

**(A) For the week that is not an EGAT Affected FM Week**

Let:  $\text{WeDecPEPer}_w$  and  $\text{WeDecSEPer}_w$  be the Weekly Declared PE Percentage and the Weekly Declared SE Percentage determined in accordance with Paragraph 5 of Part II of Schedule 3;

$\text{WeDSEn}_w$  be the Weekly Dispatch Shortfall Energy for the relevant week  $w$  determined in Paragraph 3(a)(A) of this Schedule 4; and

$\text{WeDSPE}_w$  and  $\text{WeDSSE}_w$  be the Primary Energy and Secondary Energy comprised in the Weekly Dispatch Shortfall Energy for the relevant week;

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Then:  $WeDSPE_w = WeDSEn_w * WeDecPEPer_w / (WeDecPEPer_w + WeDecSEPer_w)$

$WeDSSE_w = WeDSEn_w * WeDecSEPer_w / (WeDecPEPer_w + WeDecSEPer_w)$

**(B) For the week that is an EGAT Affected FM Week**

Let:  $WeDSPE_w$  and  $WeDSSE_w$  be the Primary Energy and Secondary Energy comprised in the Weekly Dispatch Shortfall Energy for the relevant week;

Then:  $WeDSPE_w = 0$

$WeDSSE_w = 0$

**(c) Determination of Weekly Dispatch Shortfall Payment**

For any week that is not an EGAT Affected FM Week during which Weekly Dispatch Shortfall Energy occurs, the “**Weekly Dispatch Shortfall Payment**” for a given week  $w$  comprised in a Contract Year shall be calculated as follows:

Let:  $WeDSPE_w$  and  $WeDSSE_w$  be the Primary Energy and Secondary Energy comprised in the Weekly Dispatch Shortfall Energy for the relevant week  $w$  determined in Paragraph 3(b)(A) of this Schedule 4;

$WePETar_w$  and  $WeSETar_w$  be the effective tariff for Primary Energy and Secondary Energy in that week  $w$  determined in accordance with Schedule 2 of this Agreement; and

$WeDSPay_w$  be the Weekly Dispatch Shortfall Payment for both Committed Energy Components for the relevant week  $w$ ;

Then:  $WeDSPay_w = (WeDSPE_w \times WePETar_w) + (WeDSSE_w \times WeSETar_w)$

The Weekly Dispatch Shortfall Payment for both Committed Energy Components that occurs in a given week shall be accumulated into a “**Dispatch Shortfall Payment Account**”. The balance of such Dispatch Shortfall Payment Account shall be in Thai Baht. The updated balance of such Dispatch Shortfall Payment Account at a given point of time shall be defined as the “**Accumulated Dispatch Shortfall Payment**”. For the purpose of such accounting, the Parties shall convert the US currency components comprised in such relevant payments into Thai currency by applying the relevant Prevailing Exchange Rate, and thereafter combining them with the Thai Baht components prior to the accumulation into the Dispatch Shortfall Payment Account.

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At any particular time, the “**Dispatch Shortfall Tariff**” shall be defined as the quotient resulting from the Accumulated Dispatch Shortfall Payment divided by the Accumulated Dispatch Shortfall Energy.

**4 Determination of Weekly First Make-Up Energy and Weekly Excess Energy in respect of the Pre Make-Up Excess Energy**

(a) Determination of Weekly First Make-Up Energy in respect of the Pre Make-Up Excess Energy

**(A) For the week for which EGAT exercises Make-Up right in respect of the Pre Make-Up Excess Energy**

In respect of a week  $w$  comprised in a Contract Year for which Accumulated Dispatch Shortfall Energy exists at the end of the immediately preceding week and EGAT exercises its Make-Up right in respect of the Pre Make-Up Excess Energy, the “**Weekly First Make-Up Energy**” in respect of the Pre Make-Up Excess Energy shall be calculated as follows:

Let:  $WeFiMUEn_w$  be the Weekly First Make-Up Energy in respect of the Pre Make-Up Excess Energy for the given week  $w$ ;

$WePreMUEE_w$  be the Weekly Pre Make-Up Excess Energy for the relevant week  $w$  determined in accordance with Paragraph 3(a) of this Schedule 4; and

$AccDSEn_{w-1}$  be

- (i) for the first week of the first Contract Year, 0; and
- (ii) for any other week after the Commercial Operation Date, the Accumulated Dispatch Shortfall Energy at the end of the immediately preceding week;

Then:  $WeFiMUEn_w = \text{Min} (AccDSEn_{w-1}, WePreMUEE_w)$

**(B) For the week for which EGAT does not exercise Make-Up right in respect of the Pre Make-Up Excess Energy**

In respect of a week  $w$  comprised in a Contract Year for which EGAT does not exercise Make-Up right in respect of the Pre Make-Up Excess Energy, the “**Weekly First Make-Up Energy**” shall be defined as zero.

(b) Updating the Dispatch Shortfall Energy Account and the Dispatch Shortfall Payment Account upon occurrence of Weekly First Make-Up Energy

Having determined the amount of Weekly First Make-Up Energy that occurs in such week, the Parties shall deduct such amount of Weekly First Make-Up Energy from the Dispatch Shortfall Energy Account. The balance in the

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Dispatch Shortfall Payment Account shall be set as an amount equal to the updated balance of the Dispatch Shortfall Energy Account times the relevant Dispatch Shortfall Tariff as follows:

Let:  $AccDSE_{w-1}$  and  $WeFiMUE_w$  be the values defined in Paragraph 4(a) above;

$AccFiDSE_w$  be the balance of the Dispatch Shortfall Energy Account for the week  $w$  accounting the occurrence of the Weekly First Make-Up Energy;

$AccFiDSPay_w$  be the balance of the Dispatch Shortfall Payment Account for the week  $w$  accounting the occurrence of the Weekly First Make-Up Energy; and

$WeDSTar_w$  be:

- (i) for the first week of the first Contract Year, 0; and
- (ii) for any other week after the Commercial Operation Date, the Dispatch Shortfall Tariff for the week  $w$  defined in Paragraph 3(c) of Schedule 4;

Then:  $WeDSTar_w = WeDSTar_{w-1}$

$AccFiDSE_w = AccDSE_{w-1} - WeFiMUE_w$

$AccFiDSPay_w = AccFiDSE_w \times WeDSTar_w$

For the avoidance of doubt, regardless of whether or not part or all of such Weekly First Make-Up Energy is associated with Weekly Dispatch Shortfall Energy that has been comprised in the Monthly Settled Energy for the month of its occurrence, EGAT shall not be required to make any payment in respect of such electrical energy delivered to the Delivery Point for the EGAT System pursuant to the Make-Up of Dispatch Shortfall Energy.

(c) Determination of Weekly Excess Energy

The “**Weekly Excess Energy**” for a given week  $w$  comprised in a Contract Year shall be calculated as follows:

Let:  $WeEE_w$  be the Weekly Excess Energy for the relevant week  $w$ ;

$WePreMUAdEn_w$  be the Weekly Pre Make-Up Excess Energy for the relevant week  $w$  determined in Paragraph 3(a) of this Schedule 4; and

$WeFiMUE_w$  be the Weekly First Make-Up Energy determined in Paragraph 4(a) of this Schedule 4;

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Then:  $WeEE_w = WePreMUEE_w - WeFiMUE_n_w$

5. **Determination of Weekly Second Make-Up Energy and Weekly Additional Energy in respect of the Pre Make-Up Additional Energy**

(a) **Determination of Weekly Second Make-Up Energy in respect of the Pre Make-Up Additional Energy**

**(A) For the week for which EGAT exercises Make-Up right in respect of the Pre Make-Up Additional Energy**

In respect of a week  $w$  comprised in a Contract Year for which Accumulated Dispatch Shortfall Energy exists at the end of the immediately preceding week and EGAT exercises its Make-Up right in respect of the Pre Make-Up Additional Energy, the “**Weekly Second Make-Up Energy**” in respect of the Pre Make-Up Additional Energy shall be calculated as follows:.

Let:  $WeSeMUE_n_w$  be the Weekly Second Make-Up Energy in respect of the Pre Make-Up Additional Energy for the given week  $w$ ;

$WePreMUAdEn_w$  be the Weekly Pre Make-Up Additional Energy for the relevant week  $w$  determined in accordance with Paragraph 3(a) of this Schedule 4; and

$AccFiDSE_n_w$  be

- (i) for the First week of the First Contract Year, 0; and
- (ii) for any other week after the Commercial Operation Date, the Accumulated Dispatch Shortfall Energy at the end of the immediately preceding week having been updated by deducting such amount of Weekly First Make-Up Energy in respect of the relevant week in accordance with Paragraph 4(b) of this Schedule 4, as applicable;

Then:  $WeSeMUE_n_w = \text{Min} (AccFiDSE_n_w, WePreMUAdEn_w)$

**(B) For the week for which EGAT does not exercise Make-Up right in respect of the Pre Make-Up Additional Energy**

In respect of a week  $w$  comprised in a Contract Year for which EGAT does not exercise Make-Up right in respect of the Pre Make-Up Additional Energy, the “**Weekly Second Make-Up Energy**” shall be defined as zero.

(b) **Updating the Dispatch Shortfall Energy Account and the Dispatch Shortfall Payment Account upon occurrence of Weekly Second Make-Up Energy**

Having determined the amount of Weekly Second Make-Up Energy that occurs in such week, the Parties shall deduct such amount of Weekly Second

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Make-Up Energy from the Dispatch Shortfall Energy Account. The balance in the Dispatch Shortfall Payment Account shall be set as an amount equal to the updated balance of the Dispatch Shortfall Energy Account times the relevant Dispatch Shortfall Tariff as follows:

Let:  $AccFiDSEn_w$  and  $WeSeMUE_w$  be the values defined in Paragraph 5(a) above;

$AccSeDSEn_w$  be the balance of the Dispatch Shortfall Energy Account for the week  $w$  accounting the occurrence of the Weekly Second Make-Up Energy;

$AccSeDSPay_w$  be the balance of the Dispatch Shortfall Payment Account for the week  $w$  accounting the occurrence of the Weekly Second Make-Up Energy; and

$WeDSTar_w$  be:

- (i) for the First week of the First Contract Year, 0; and
- (ii) for any other week after the Commercial Operation Date, the Dispatch Shortfall Tariff for the week  $w$  defined in Paragraph 3(c) of Schedule 4;

Then:  $WeDSTar_w = WeDSTar_{w-1}$

$AccSeDSEn_w = AccFiDSEn_w - WeSeMUEn_w$

$AccSeDSPay_w = AccSeDSEn_w \times WeDSTar_w$

For the avoidance of doubt, regardless of whether or not part or all of such Weekly Second Make-Up Energy is associated with Weekly Dispatch Shortfall Energy that has been comprised in the Monthly Settled Energy for the month of its occurrence, EGAT shall not be required to make any payment in respect of such electrical energy delivered to the Delivery Point for the EGAT System pursuant to the Make-Up of Dispatch Shortfall Energy.

(c) Determination of Weekly Additional Energy

The “**Weekly Additional Energy**” for a given week  $w$  comprised in a Contract Year shall be calculated as follows:

Let:  $WeAdEn_w$  be the Weekly Additional Energy for the relevant week  $w$ ;

$WePreMUAdEn_w$  be the Weekly Pre Make-Up Additional Energy for the relevant week  $w$  determined in Paragraph 3(a) of this Schedule 4; and

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WeSeMUEn<sub>w</sub> be the Weekly Second Make-Up Energy determined in Paragraph 5(a) of this Schedule 4;

Then: WeAdEn<sub>w</sub> = WePreMUAdEn<sub>w</sub> – WeSeMUEn<sub>w</sub>

(d) Determination of Energy Components comprised in the Weekly Additional Energy

Let: WeAdEn<sub>w</sub> be the Weekly Additional Energy determined in accordance with Paragraph 5(c) of Schedule 4;

WeAdPE<sub>w</sub> be the Weekly Additional Primary Energy comprised in the Weekly Additional Energy for a given week w;

WeAdSE<sub>w</sub> be the Weekly Additional Secondary Energy comprised in the Weekly Additional Energy for a given week w; and

WeAdEE<sub>w</sub> be the Weekly Additional Excess Energy comprised in the Weekly Additional Energy for a given week w;

WeDecAdPEPer<sub>w</sub>, WeDecAdSEPer<sub>w</sub> and WeDecAdEEPer<sub>w</sub> be the Weekly Declared Additional EC Percentage for week w determined in accordance with Paragraph 5B of Schedule 3;

Then: WeAdPE<sub>w</sub> = WeAdEn<sub>w</sub> \* WeDecAdPEPer<sub>w</sub>

WeAdSE<sub>w</sub> = WeAdEn<sub>w</sub> \* WeDecAdSEPer<sub>w</sub>

WeAdEE<sub>w</sub> = WeAdEn<sub>w</sub> \* WeDecAdEEPer<sub>w</sub>

In respect of the MU-AD Period, the amounts of Weekly Additional Primary Energy and Weekly Additional Secondary Energy that occurs in a given week comprised in such MU-AD Period shall be accumulated into an “**Additional Energy Account**”.

6 Determination of Monthly Supply Excess Energy, Monthly Supply Excess Payment and Annual Supply Shortfall Energy in respect of each Committed Energy Component

(a) Energy Components in respect of Monthly Supply Excess Energy

For each month m in , the “**Monthly Supply Excess Primary Energy**” and the “**Monthly Supply Excess Secondary Energy**” for that month shall be calculated as follows:

Let : MoSEPE<sub>m</sub> be the Monthly Supply Excess Primary Energy for month m comprised in a given j;

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MoSESE<sub>m</sub> be the Monthly Supply Excess Secondary Energy for month m comprised in a given j;

MoPESup<sub>m</sub> and MoSESup<sub>m</sub> be the Monthly Supply for the respective Committed Energy Component for the relevant month determined in accordance with Paragraph 1(d) of Schedule 4; and

MoPESetTar<sub>m</sub> and MoSESetTar<sub>m</sub> be the Monthly Settled Energy Targets for each Committed Energy Component for the relevant month determined in accordance with Paragraph 2(b) of Schedule 4;

Then:  $MoSEPE_m = \text{Max} [(MoPESup_m - MoPESetTar_m), 0]$

$MoSESE_m = \text{Max} [(MoSESup_m - MoSESetTar_m), 0]$

The amounts of MoSEPE<sub>m</sub> and the MoSESE<sub>m</sub> that occur in a given month shall be accumulated into the “**Supply Excess PE Account**” and the “**Supply Excess SE Account**”, respectively. The updated balance of such Supply Excess PE Account and Supply Excess SE Account at a given point of time shall be defined as the “**Accumulated Supply Excess Primary Energy**” and the “**Accumulated Supply Excess Secondary Energy**”, respectively.

(b) Determination of Monthly Supply Excess Payment

The “**Monthly Supply Excess Payment**” for a given month shall be determined as follows:

Let: MoSEPE<sub>m</sub> and MoSESE<sub>m</sub> be the Monthly Supply Excess Primary Energy and Monthly Supply Excess Secondary Energy for the relevant month determined in Paragraph 6(a) of this Schedule 4;

MoPETar<sub>m</sub> and MoSETar<sub>m</sub> be respectively the effective tariff for Primary Energy and Secondary Energy in the relevant month determined in accordance with Schedule 2 of this Agreement; and

MoSEPEPay<sub>m</sub> and MoSESEPay<sub>m</sub> be the “**Monthly Supply Excess PE Payment**” and the “**Monthly Supply Excess SE Payment**” for the relevant month;

Then:  $MoSEPEPay_m = MoSEPE_m \times MoPETar_m$

$MoSESEPay_m = MoSESE_m \times MoSETar_m$

Notwithstanding the determination of Monthly Supply Excess PE Payment provided in this Paragraph 6(b) of Schedule 4, the payment in relation thereto shall be made in the currency as provided in accordance with Section 5.3.3(c).

Following converting the US currency component of the Monthly Supply Excess PE Payment into Thai Baht using the Reference Exchange Rate, the

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MoSEPEPay<sub>m</sub> and the MoSESEPay<sub>m</sub> for the relevant month shall be accumulated into the respective “**Supply Excess PE Payment Account**” and the “**Supply Excess SE Payment Account**”, respectively. The balance of both Supply Excess PE Payment Account and Supply Excess SE Payment Account shall be in Thai Baht. The updated balance of such Supply Excess PE Payment Account and Supply Excess SE Payment Account at a given point of time shall be defined as the “**Accumulated Supply Excess PE Payment**” and the “**Accumulated Supply Excess SE Payment**”, respectively.

At any particular point of time, the “**Supply Excess PE Tariff**” shall be defined as the quotient resulting from the Accumulated Supply Excess PE Payment divided by the Accumulated Supply Excess Primary Energy, and the “**Supply Excess SE Tariff**” shall be defined as the quotient resulting from the Accumulated Supply Excess SE Payment divided by the Accumulated Supply Excess Secondary Energy.

(c) Energy Components in respect of Annual Supply Shortfall Energy determined at the end of each Contract Year

The “**Annual Supply Shortfall Energy**” for the last month of a Contract Year shall be determined as follows:

Let: MoPESup<sub>q</sub> be the Monthly Supply for Primary Energy for the last month q of a given Contract Year j, as determined in accordance with Paragraph 1 of Schedule 4;

MoSESup<sub>q</sub> be the Monthly Supply for Secondary Energy for the last month a of a given Contract Year j, as determined in accordance with Paragraph 1 of Schedule 4;

MoPESetTar<sub>q</sub> be the Monthly Settled Energy Target for Primary Energy for the last month q of a given Contract Year j, as provided in Paragraph 2 of Schedule 4;

MoSESetTar<sub>q</sub> be the Monthly Settled Energy Target for Secondary Energy for the last month q of a given Contract Year j, as provided in Paragraph 2 of Schedule 4;

AnSSPE<sub>j</sub> be the “**Annual Supply Shortfall Primary Energy**” for a given Contract Year j;

AnSSSE<sub>j</sub> be the “**Annual Supply Shortfall Secondary Energy**” for a given Contract Year j;

$$\text{Then: AnSSPE}_j = \text{Max} [0, (\text{MoPESetTar}_q - \text{MoPESup}_q)]$$

$$\text{AnSSSE}_j = \text{Max} [0, (\text{MoSESetTar}_q - \text{MoSESup}_q)]$$

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**7 The set off process in respect of Annual Supply Shortfall Energy and Accumulated Supply Excess Energy**

In the event that both:

- (i) the Annual Supply Shortfall Primary Energy or the Annual Supply Shortfall Secondary Energy occurs in the last month of each Contract Year as determined in Paragraph 6(c) of this Schedule 4; and
- (ii) the corresponding Accumulated Supply Excess Primary Energy or Accumulated Supply Excess Secondary Energy provided in Paragraph 6(a) of this Schedule 4 is positive,

the Parties shall set off: (1) the Accumulated Supply Excess Primary Energy with the corresponding Annual Supply Shortfall Primary Energy; and (2) the Accumulated Supply Excess Secondary Energy with the corresponding Annual Supply Shortfall Secondary Energy, respectively.

Any portion of the Accumulated Supply Excess Primary Energy and/or the Accumulated Supply Excess Secondary Energy that has been set off with the corresponding Annual Supply Shortfall Primary Energy or Annual Supply Shortfall Secondary Energy, as applicable, shall be paid by EGAT at the end of the month at the Supply Excess PE Tariff and the Supply Excess SE Tariff, as applicable, in accordance with Section 5.2.2 and Paragraph 2(a) of Schedule 5. The currency of payment and the applicable exchange rate for each Committed Energy Component pursuant to such set-off shall be in accordance with Section 5.3.3(c).

Upon such set off, the respective balances of the Supply Excess PE Account and the Supply Excess SE Account shall each be reduced by the corresponding amount that has been set off in accordance with Paragraph 2(b) of Schedule 5.

Other than the last Contract Year of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term, in the event that the Annual Supply Shortfall Primary Energy or the Annual Supply Shortfall Secondary Energy, as applicable, determined in accordance with Paragraph 6(c) of Schedule 4 is greater than the Accumulated Supply Excess Primary Energy or the Accumulated Supply Excess Secondary Energy, as applicable, such excess shall be defined as the “**Accumulated Supply Shortfall Primary Energy**” and the “**Accumulated Supply Shortfall Secondary Energy**” for the relevant Contract Year, respectively, as further provided in Paragraph 2(b) of Schedule 5.

**8 Determinations during the MU-SO Period**

- (a) Determination of Weekly Set Off Energy during the MU-SO Period

In the event that the balance of the Additional Energy Account at the end of the MU-AD Period is greater than zero (0), the Weekly Set Off Energy that occurs during the MU-SO Period shall be determined as follows:

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Let:  $WeSOEn_w$  be the Weekly Set Off Energy that occurs at the end of a given week  $w$  comprised in the MU-SO Period;

$AccAdEn_{w-1}$  be the balance of the Additional Energy Account at the end of the immediately preceding week; and

$WeDSEn_w$  be the Weekly Dispatch Shortfall Energy that occurs at the end of a given week  $w$  comprised in the MU-SO Period determined in Paragraph 3(a)(A) of this Schedule 4;

Then:  $WeSOEn_w = \text{Min} (AccAdEn_{w-1}, WeDSEn_w)$

(b) Determination of Committed Energy Components comprised in the Weekly Set Off Energy during the MU-SO Period

The Committed Energy Components comprised in the Weekly Set Off Energy during the MU-SO Period shall be determined by applying the respective Weekly Declared EC Percentage provided in Paragraph 5 of Part II of Schedule 3 to the Weekly Set Off Energy.

Let:  $WeDecPEPer_w$  and  $WeDecSEPer_w$  be the Weekly Declared PE Percentage and the Weekly Declared SE Percentage determined in accordance with Paragraph 5 of Part II of Schedule 3;

$WeSOEn_w$  be the Weekly Set Off Energy for the relevant week  $w$  determined in Paragraph 4(f) of this Schedule 4; and

$WeSOPE_w$  and  $WeSOSE_w$  be the Primary Energy and Secondary Energy comprised in the Weekly Set Off Energy for the relevant week;

Then:  $WeSOPE_w = WeSOEn_w \times WeDecPEPer_w / (WeDecPEPer_w + WeDecSEPer_w)$

$WeSOSE_w = WeSOEn_w \times WeDecSEPer_w / (WeDecPEPer_w + WeDecSEPer_w)$

9 List of Accounts

This Paragraph 9 of Schedule 4 provides a summary of the Accounts that the Parties establish to implement and give effect to this Agreement.

For the avoidance of doubt:

- (A) all Accounts shall be reset to zero upon their expiry;
- (B) the balances of the Dispatch Shortfall Energy Account, the Supply Excess PE Account, and the Supply Excess SE Account shall be reconciled at the end of the Term as provided in Section 5.2.3;

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- (C) subject to (A) and (B) above, there shall be no upper limit for the accumulation of value held in any Account established and listed in this Schedule 4; and
- (D) subject to the provisions of Section 6.8 in respect of amounts in dispute, no interest shall be accrued for the values held in all Accounts that are related to payments.

### **9.1 Accounting of Dispatch Shortfall Energy and Additional Energy**

- (a) a Dispatch Shortfall Energy Account, which shall hold the updated value of the Accumulated Dispatch Shortfall Energy that occurs during the period after the Commercial Operation Date, as defined in Paragraph 3(a) of Schedule 4;
- (b) a Dispatch Shortfall Payment Account, which shall hold the updated value of the Accumulated Dispatch Shortfall Payment that occurs during the period after the Commercial Operation Date, as defined in Paragraph 3(c) of Schedule 4;
- (c) an Additional Energy Account, which shall hold the updated value of the accumulation of the sum of the amounts of Primary Energy and Secondary Energy that are comprised in the Weekly Additional Energy that occurs during the MU-AD Period, as defined in Paragraph 4(d)(A) of Schedule 4;

### **9.2 Accounting of Declaration and Delivery**

- (a) an Annual PE Supply Account, which shall hold the accumulated and updated value of the Monthly Supply for Primary Energy that occurs for the given Contract Year, as defined in Paragraph 1 of Schedule 4;

### **9.3 Accounting of Supply Excess**

- (a) a Supply Excess PE Account and a Supply Excess SE Account (for each of the Primary Energy and the Secondary Energy, respectively), each of which shall hold the respective updated value of the Accumulated Supply Excess Primary Energy and Accumulated Supply Excess Secondary Energy that occurs during the period after the Commercial Operation Date, as defined in Paragraph 6(a) of Schedule 4;
- (b) a Supply Excess PE Payment Account and a Supply Excess SE Payment Account (for each of the Primary Energy and Secondary Energy, respectively), each of which shall hold the respective updated value of the Accumulated Supply Excess PE Payment and the Accumulated Supply Excess SE Payment that occurs during the period after the Commercial Operation Date, as defined in Paragraph 6(b) of Schedule 4;

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**9.4 Accounting of Excess Energy**

- (a) an Excess Revenue Account, which shall hold the accumulated and updated value of the Monthly Excess Revenue that occurs during the period after the Commercial Operation Date, as defined in Paragraph 1(c) of Schedule 5;

**9.5 Accounting of Force Majeure Offset Amount**

- (a) an EGAT Pre COD FMOA Account which shall hold the value of the Force Majeure Offset Amount that EGAT pays to the Generator prior to Commercial Operation Date in accordance with Section 11.7.3;
- (b) an EGAT Relevant Period n FMOA Account for each of the Relevant Period n which shall hold the accumulated and updated value of the Force Majeure Offset Amount that EGAT pays to the Generator during the respective Relevant Period n (where n is 2, 3, 4, 5 or 6), as applicable, in accordance with Section 11.7.4;
- (c) a Relevant Period n EGAT Excused FMOA Period Account for each of the Relevant Period n which shall hold the accumulated and updated value of the duration of each EGAT Excused FMOA Period that occurs in the respective Relevant Period n (where n is 2, 3, 4, 5 or 6), as applicable, in accordance with Section 11.7.4;
- (d) a Generator Pre COD FMOA Account which shall hold the value of the Force Majeure Offset Amount that the Generator pays to EGAT prior to Commercial Operation Date in accordance with Section 11.8.3;
- (e) a Generator Relevant Period n FMOA Account for each of the Relevant Period n which shall hold the accumulated and updated value of the Force Majeure Offset Amount that the Generator pays to EGAT during the respective Relevant Period n (where n is 2, 3, 4, 5 or 6), as applicable, in accordance with Section 11.8.4; and
- (f) a Relevant Period n Generator Excused FMOA Period Account for each of the Relevant Period n which shall hold the accumulated and updated value of the duration of each Generator Excused FMOA Period that occurs in the respective Relevant Period n (where n is 2, 3, 4, 5 or 6), as applicable, in accordance with Section 11.8.4.

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**Schedule 5****DETERMINATION OF ENERGY PAYMENTS**

This Schedule 5 contains the procedures for determining, in respect of each month after the Commercial Operation Date, the Monthly Energy Payment that occurs pursuant to the Declaration and delivery of electrical energy for such month.

**1 Determination of the Monthly Base Energy Payment****(a) Determination of Monthly Settled Energy**

Let: MoPESup<sub>m</sub> be the Monthly Supply for Primary Energy for a given month m comprised in a Contract Year, as determined in Paragraph 1(d) of Schedule 4;

MoSESup<sub>m</sub> be the Monthly Supply for Secondary Energy for a given month m comprised in a Contract Year, as determined in Paragraph 1(d) of Schedule 4;

MoPESetTar<sub>m</sub> be the Monthly Settled Energy Target for Primary Energy for a given month m comprised in a Contract Year, as determined in Paragraph 2 of Schedule 4;

MoSESetTar<sub>m</sub> be the Monthly Settled Energy Targets for Secondary Energy for a given month m comprised in a Contract Year, as determined in Paragraph 2 of Schedule 4;

MoSetPE<sub>m</sub> be the Primary Energy comprised in the Monthly Settled Energy for a given month m comprised in a Contract Year;

MoSetSE<sub>m</sub> be the Secondary Energy comprised in the Monthly Settled Energy for a given month m comprised in a Contract Year; and

m be the subscript that characterizes a month comprised in a Contract Year;

Then:  $\text{MoSetPE}_m = \text{Min}(\text{MoPESup}_m, \text{MoPESetTar}_m)$

$\text{MoSetSE}_m = \text{Min}(\text{MoSESup}_m, \text{MoSESetTar}_m)$

**(b) Determination of the Monthly Base Energy Payment and Monthly Excess Revenue**

At the end of each month of any Contract Year, the basic component of the Monthly Energy Payment to be made by EGAT to the Generator (the "Monthly Base Energy Payment") shall be determined as follows:

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Let:  $MoSetPE_m$  and  $MoSetSE_m$  be the values determined in Paragraph 1(a) of this Schedule 5;

$MoPETar_m$  be the tariff for Primary Energy for the relevant month  $m$  comprised in a Contract Year  $j$ , as determined in accordance with Schedule 2 of this Agreement;

$MoSETar_m$  be the tariff for Secondary Energy for the relevant month  $m$  comprised in a Contract Year  $j$ , as determined in accordance with Schedule 2 of this Agreement;

$MoEESup_m$  be the Month Supply for Excess Energy for a given month  $m$  comprised in Contract Year  $j$ , as determined in Paragraph 1(d) of Schedule 4;

$MoEETar_m$  be the tariff for Excess Energy for the relevant month  $m$  comprised in a Contract Year  $j$ , as determined in accordance with Schedule 2 of this Agreement;

$TestEn_m$  be the Test Energy for the relevant month  $m$  comprised in a Contract Year  $j$ ;

$TETar$  be the Test Energy Tariff specified in Schedule 2 of this Agreement;

$MoBasEnPay_m$  be the Monthly Base Energy Payment for the relevant month  $m$  comprised in a Contract Year  $j$  defined herein; and

$MoExRev_m$  be the payment for Monthly Excess Energy for the relevant month  $m$  comprised in a Contract Year  $j$  (the “**Monthly Excess Revenue**”);

$m$  be the subscript that characterizes a month comprised in the Contract Year  $j$ ;

Then:  $MoBasEnPay_m = MoSetPE_m \times MoPETar_m + MoSetSE_m \times MoSETar_m + MoEESup_m \times MoEETar_m + TestEn_m \times TETar$

$MoExRev_m = MoEESup_m \times MoEETar_m$

(c) Updating of the Excess Revenue Account

Let:  $AccExRev_m$  be the balance of the Excess Revenue Account at the end of the given month  $m$ ;

$AccExRev_{m-1}$  be

(i) for the first month of the first Contract Year, 0; and

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- (ii) for any other month after the Commercial Operation Date, the balance of the Excess Revenue Account at the end of the immediately preceding month; and

MoExRev<sub>m</sub> be the value defined or determined in Paragraph 1(b) of Schedule 5;

$$\text{Then: AccExRev}_m = \text{AccExRev}_{m-1} + \text{MoExRev}_m$$

2 **Adjustment for the determination of the Monthly Energy Payment upon set off of the Annual Supply Shortfall Energy against the Accumulated Supply Excess Energy**

- (a) **Determination of the increase for the determination of the Monthly Energy Payment pursuant to the set off provided in Paragraph 7 of Schedule 4**

For the last month of each Contract Year, pursuant to the set off between the Annual Supply Shortfall Primary Energy or Annual Supply Shortfall Secondary Energy against the corresponding Accumulated Supply Excess Primary Energy or Accumulated Supply Excess Secondary Energy, as applicable, that occurs in accordance with Paragraph 7 of Schedule 4, the determination of Monthly Energy Payment in respect of such month shall include an increase determined as follows:

Let: AccSEPE<sub>q</sub> be the **Accumulated Supply Excess Primary Energy** at the end of the last month q of a given Contract Year j provided in Paragraph 6(a) of Schedule 4 before set off against the Annual Supply Shortfall Primary Energy;

AccSESE<sub>q</sub> be the **Accumulated Supply Excess Secondary Energy** at the end of the last month q of a given Contract Year j provided in Paragraph 6(a) of Schedule 4 before set off against the Annual Supply Shortfall Secondary Energy;

AnSSPE<sub>q</sub> be the **Annual Supply Shortfall Primary Energy** that occurs in the last month q of a given Contract Year j, as determined in accordance with Paragraph 6(c) of Schedule 4;

AnSSSE<sub>q</sub> be the **Annual Supply Shortfall Secondary Energy** that occurs in the last month q of a given Contract Year j, as determined in accordance with Paragraph 6(c) of Schedule 4;

MoSEPETar<sub>q</sub> be the **Supply Excess PE Tariff** for the last month q of a given Contract Year j, as defined in Paragraph 6(b) of Schedule 4 before set off against the Annual Supply Shortfall Primary Energy;

MoSESETar<sub>q</sub> be the **Supply Excess SE Tariff** for the last month q of a given Contract Year j, as defined in Paragraph 6(b) of Schedule 4 before set off against the Annual Supply Shortfall Secondary Energy;

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AnSSPESetPay<sub>q</sub> be the adjustment made to the Monthly Base Energy Payment for such last month q of the relevant Contract Year j in respect of Primary Energy pursuant to the set off provided in Paragraph 7 of Schedule 4;

AnSSSESetPay<sub>q</sub> be the adjustment made to the Monthly Base Energy Payment for such last month q of the relevant Contract Year j in respect of Secondary Energy pursuant to the set off provided in Paragraph 7 of Schedule 4;

AnSSSetPay<sub>q</sub> be the total adjustment made to the Monthly Base Energy Payment for such last month q of the relevant Contract Year j pursuant to the set off provided in Paragraph 7 of Schedule 4; and

q be the subscript that characterizes the last month comprised in the Contract Year j;

$$\text{Then: AnSSPESetPay}_q = \text{Min}(\text{AccSEPE}_q, \text{AnSSPE}_q) \times \text{MoSEPETar}_q$$

$$\text{AnSSSESetPay}_q = \text{Min}(\text{AccSESE}_q, \text{AnSSSE}_q) \times \text{MoSESETar}_q$$

$$\text{AnSSSetPay}_q = \text{AnSSPESetPay}_q + \text{AnSSSESetPay}_q$$

(b) Updating of the Supply Excess PE Account, the Supply Excess SE Account, the Supply Excess PE Payment Account and the Supply Excess SE Payment Account and determination of Accumulated Supply Shortfall Energy

Let: AccSEPE<sub>q</sub>, AccSESE<sub>q</sub>, AnSSPE<sub>q</sub>, AnSSSE<sub>q</sub>, MoSEPETar<sub>q</sub> and MoSESETar<sub>q</sub> be the values defined in Paragraph 2(a) of Schedule 4;

AccSEPE<sub>s</sub> be the **Accumulated Supply Excess Primary Energy** at the end of the last month q of a given Contract Year j after set off against the Annual Supply Shortfall Primary Energy;

AccSESE<sub>s</sub> be the **Accumulated Supply Excess Secondary Energy** at the end of the last month q of a given Contract Year j after set off against the Annual Supply Shortfall Secondary Energy;

AccSSPE<sub>q</sub> be the **Accumulated Supply Shortfall Primary Energy** that occurs in the last month q of a given Contract Year j in accordance with Paragraph 7 of Schedule 4;

AccSSSE<sub>q</sub> be the **Accumulated Supply Shortfall Secondary Energy** that occurs in the last month q of a given Contract Year j in accordance with Paragraph 7 of Schedule 4;

AccSEPEPay<sub>s</sub> be the balance of the Supply Excess PE Payment Account at the end of the last month q of a given Contract Year j after

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set off of the relevant Accumulated Supply Excess Primary Energy against the Annual Supply Shortfall Primary Energy; and

AccSESEPay<sub>s</sub> be the balance of the Supply Excess SE Payment Account at the end of the last month q of a given Contract Year j after set off of the relevant Accumulated Supply Excess Secondary Energy against the Annual Supply Shortfall Secondary Energy;

$$\text{Then: AccSEPE}_s = \text{AccSEPE}_q - \text{Min}(\text{AccSEPE}_q, \text{AnSSPE}_q)$$

$$\text{AccSESE}_s = \text{AccSESE}_q - \text{Min}(\text{AccSESE}_q, \text{AnSSSE}_q)$$

$$\text{AccSEPEPay}_s = \text{AccSEPE}_s \times \text{MoSEPETar}_q$$

$$\text{AccSESEPay}_s = \text{AccSESE}_s \times \text{MoSESETar}_q$$

Other than the last Contract Year of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term

$$\text{AccSSPE}_q = \text{AnSSPE}_q - \text{Min}(\text{AccSEPE}_q, \text{AnSSPE}_q)$$

$$\text{AccSSSE}_q = \text{AnSSSE}_q - \text{Min}(\text{AccSESE}_q, \text{AnSSSE}_q)$$

In respect of the last Contract Year of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (ii) the Term

$$\text{AccSSPE}_q = 0$$

$$\text{AccSSSE}_q = 0$$

**3 Determination of Monthly Energy Payment for any month of a Contract Year other than the last month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term**

Let: MoBasEnPay<sub>m</sub> and AnSSSetPay<sub>q</sub> be the values determined in Paragraphs 1(b) and 2(a) of this Schedule 5, respectively, for any month m of a Contract Year other than the last month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term; and

MoEnPay<sub>m</sub> be the Monthly Energy Payment for such month m comprised in a given Contract Year;

$$\text{Then: MoEnPay}_m = \text{MoBasEnPay}_m + \text{AnSSSetPay}_q$$

**4 Reconciliation of Accounts and adjustment for the determination of the Monthly Energy Payment at the end of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term**

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(a) Reconciliation of the Supply Excess PE Account, the Supply Excess SE Account and the Dispatch Shortfall Payment Account with the Excess Revenue Account

With respect to the last month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term:

Let:  $AccSEPE_s$  and  $AccSESE_s$  be the balance of the Supply Excess PE Account and the Supply Excess SE Account at the end of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term, having been updated in accordance with Paragraph 2(b) of this Schedule 5, but before the reconciliation provided in this Paragraph 4(a);

$LaEETar$  be the tariff for Excess Energy at the end of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term, as determined in accordance with Schedule 2 of this Agreement;

$AccDSPay_q$  be the balance of the Dispatch Shortfall Payment Account at the end of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term before the reconciliation provided in this Paragraph 4(a);

$AccExRev_r$  be the balance of the Excess Revenue Account at the end of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term, having been updated in accordance with Paragraph 5(b) of Schedule 4, as applicable, but before the reconciliation provided in this Paragraph 4(a);

$AccExRev_x$  be the balance of the Excess Revenue Account at the end of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term, having been updated in accordance with Paragraph 5(b) of Schedule 4 and reconciled with the Supply Excess PE Account and the Supply Excess SE Account, as applicable, but before the reconciliation with the Dispatch Shortfall Payment Account; and

$FinExRev$  be the balance of the Excess Revenue Account at the end of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term after the reconciliation provided in this Paragraph 4(a);

Then:  $AccExRev_x = AccExRev_r + (AccSEPE_s + AccSESE_s) \times LaEETar$

$FinExRev = \text{Max} [(AccExRev_x - AccDSPay_q), 0]$

With respect to the last month of: (i) the Relevant Period 2 and (ii) the Relevant Period 4, the balances of the Supply Excess PE Account, the Supply Excess PE Payment Account, the Supply Excess SE Account, the Supply Excess SE Payment Account and the Excess Revenue Account shall all be

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reset to zero after the reconciliation provided in this Paragraph 4(a) of Schedule 5.

With respect to the last month of the Term, the balances of the Supply Excess PE Account, the Supply Excess PE Payment Account, the Supply Excess SE Account, the Supply Excess SE Payment Account, the Dispatch Shortfall Energy Account, the Dispatch Shortfall Payment Account and the Excess Revenue Account shall all be reset to zero after the reconciliation provided in this Paragraph 4(a) of Schedule 5.

- (b) Adjustment for the determination of the Monthly Energy Payment at the end of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term

Let:  $AccSEPE_s$ ,  $AccSESE_s$ ,  $LaEETar$ ,  $AccDSPay_q$ ,  $AccExRev_x$  and  $FinExRev$  be the values defined or determined in Paragraph 4(a) of this Schedule 5; and

$LaRecPay$  be the adjustment made to the Monthly Base Energy Payment for the last month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term pursuant to the reconciliation of Accounts provided in Paragraph 4(a) of Schedule 5;

Then:  $LaRecPay = (AccSEPE_s + AccSESE_s) \times LaEETar - \text{Min}(AccDSPay_q, AccExRev_x) - FinExRev \times 0.25$

Thereafter the balance of the Excess Revenue Account shall be reset to zero.

**5 Determination of the Monthly Energy Payment for the last month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term**

Let:  $MoBasEnPay_m$ ,  $AnSSSetPay_q$  and  $LaRecPay$  be the values determined in Paragraphs 1(b), 2(a) and 4(b) of this Schedule 5, respectively, for the last month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term; and

$LaMoEnPay$  be the Monthly Energy Payment in respect of the last month of: (i) the Relevant Period 2; (ii) the Relevant Period 4; and (iii) the Term;

Then:  $LaMoEnPay = MoBasEnPay_m + AnSSSetPay_q + LaRecPay$

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**Schedule 6**

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**Schedule 7****CALCULATIONS AND APPLICATIONS OF METER READINGS****Part I: Decimal Places of Calculation and Specification of Values**

Unless otherwise specified in this Agreement, all values in this Agreement shall be calculated to the decimal places as provided in Part I of this Schedule 7.

**1 Specification of Financial Values**

For the purpose of the Agreement, all financial values shall be specified in the following numeric format:

- (i) All financial values in Thai currency to the nearest 1/100<sup>th</sup> of a Thai Baht; and
- (ii) All financial values in US currency to the nearest 1/100<sup>th</sup> of a US Dollar.

**2 Specification of Engineering Values**

For the purpose of the Agreement, engineering values shall be specified in the following numeric format:

- (i) All units of electrical energy to the nearest 1/1,000<sup>th</sup> of a MWh;
- (ii) All units of Active Power to the nearest 1/1,000<sup>th</sup> of a MW;
- (iii) All units of Reactive Power to the nearest 1/1,000<sup>th</sup> of a MVAR; and
- (iv) All units of water volume to the nearest 1/1,000<sup>th</sup> of one thousand (1,000) cubic meters.

**3 Specification of Time Values**

All units of time shall be specified to the nearest 1/360<sup>th</sup> of one hour (where such time parameters are used in a formula or otherwise defined in the Agreement).

**4 Calculations of Values**

All calculations shall be performed with two (2) additional significant digits in the respective decimal places in excess of the number of digits for which the corresponding value is specified as required by Paragraphs 1 to 3 above.

**5 Round Up of Values**

In all calculations pursuant to this Agreement, the last decimal place of the relevant values as required to be specified herein shall be rounded up to the next whole integer

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if the value of the next decimal place prior to such round up is equal to or greater than five (5).

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## Part II: Calculation of electrical energy at the Delivery Point

Part II of Schedule 7 sets out the formulae to be used for the determination of the Gross Electrical Energy and the Test Energy over a given period of time and referred to the Delivery Point, based on the applicable values of the respective Meter Readings from the Metering Systems as provided in Part IV of Schedule 14 and taking into account the effect pursuant to the allocation of the Transmission Loss.

Unless otherwise agreed by the Parties, both transmission circuits of the Transmission Line shall be considered as identical for the purpose of Part II of this Schedule 7.

Gross Electrical Energy, Test Energy, Unit Operation Energy and Net Electrical Energy shall be computed, logged and confirmed in accordance with the respective requirements of Section 6 and Schedule 28.

### 1 Determination of the Gross Electrical Energy

#### (A) Principles for the allocation of the Transmission Loss

In respect of the determination of the total amount of the electrical energy delivered to the EGAT System by the Generator System calculated at the Delivery Point for a given period (the "Gross Electrical Energy"), the responsibility for the Transmission Loss between the Xayaburi Switchyard and the Loei 2 Substation shall be allocated between Generator (and all other projects accessing the Delivery Point via the Generator Transmission Line in delivering electrical energy to the EGAT System, as applicable) and EGAT as follows:

- (1) Generator (and all other projects accessing the Delivery Point via the Generator Transmission Line in delivering electrical energy to the EGAT System, as applicable) shall be responsible for such portion of the Transmission Loss that is deemed to have occurred between the Xayaburi Switchyard and the Delivery Point; and
- (2) EGAT shall be responsible for such portion of the Transmission Loss that is deemed to have occurred between the Delivery Point and the Loei 2 Substation.

#### (B) Determination of the Line Loss Ratio

In respect of a given amount of power transfer determined by either or both of the Xayaburi Metering System and the Loei 2 Metering System, as applicable:

Let: XYBDPLoss be such portion of the Transmission Loss between the Xayaburi Switchyard and the Delivery Point;

DPLoei2Loss be such portion of the Transmission Loss between the Delivery Point and the Loei 2 Substation;

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XYBDPDis be the length of the transmission circuits between the current transformers in respect of the Energy Meters at the Xayaburi Switchyard and the Delivery Point;

DPLoei2Dis be the length of the transmission circuits between the Delivery Point and the current transformers in respect of the Energy Meters at the Loei 2 Substation; and

LossRat be the ratio of such portion of the Transmission Loss that is responsible by Generator to such portion of the Transmission Loss that is responsible by EGAT, regardless of whether such Transmission Loss is determined on the basis of one or two transmission circuits remaining in service and, for the case where there are two transmission circuits remaining in service, regardless of whether such allocation is performed in respect of either or both of such two transmission circuits;

Then:  $\text{LossRat} = \text{XYBDPLoss} / \text{DPLoei2Loss} = \text{XYBDPDis} / \text{DPLoei2Dis}$

(C) Determination of the Gross Electrical Energy

(a) Determination of the Gross Electrical Energy in respect of the Generator System prior to the adjustment for AGC Failure Excess Energy or turn off the AGC Function

The amount of the electrical energy delivered to the EGAT System via the Generator Transmission Line (the "Gross Electrical Energy"), determined at the Delivery Point for a given period, shall be calculated from the applicable values of the respective Meter Readings of the respective energy meters comprised in the Loei 2 Metering System and the Xayaburi Metering System, as provided in Part IV of Schedule 14.

Let: Loei2En<sub>1</sub> and Loei2En<sub>2</sub> be, for a given period of time  $\Delta T$ , the applicable values of the respective Meter Readings of the relevant energy meters of the Loei 2 Metering System for transmission circuit 1 and transmission circuit 2 of the Transmission Line, respectively;

Loei2En<sub>i</sub> be, for a given period of time  $\Delta T$ , either Loei2En<sub>1</sub> or Loei2En<sub>2</sub>;

XYBEn<sub>1</sub> and XYBEn<sub>2</sub> be, for a given period of time  $\Delta T$ , the applicable values of the respective Meter Readings of the relevant energy meters of the Xayaburi Metering System for transmission circuit 1 and transmission circuit 2 of the Transmission Line, respectively;

XYBEn<sub>i</sub> be, for a given period of time  $\Delta T$ , either XYBEn<sub>1</sub> or XYBEn<sub>2</sub>;

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GrossEn<sub>1</sub> and GrossEn<sub>2</sub> be the Gross Electrical Energy transmitted from the Generator System to the EGAT System, determined at the Delivery Point over a given period of time ΔT for transmission circuit 1 and transmission circuit 2 of the Transmission Line, respectively;

GrossEn<sub>i</sub> be, for a given period of time ΔT, either GrossEn<sub>1</sub> or GrossEn<sub>2</sub>;

PreGrossEn be, for a given period of time ΔT, the Gross Electrical Energy;

LossRat be the value defined in Paragraph 1(B) of Part II of this Schedule 7;

GenResLL<sub>i</sub> be such portion of the Transmission Loss for a given transmission circuit i between the Xayaburi Switchyard and the Loei 2 Substation that is responsible by Generator; and

EGATResLL<sub>i</sub> be, in respect of each type of Transmission Loss allocation, such portion of the Transmission Loss for a given transmission circuit i between the Xayaburi Switchyard and the Loei 2 Substation that is responsible by EGAT;

$$\text{Then: GenResLL}_i = \text{XYBEn}_i - \text{GrossEn}_i \quad (1)$$

$$\text{EGATResLL}_i = \text{GrossEn}_i - \text{Loei2En}_i \quad (2)$$

$$\text{LossRat} = \text{GenResLL}_i / \text{EGATResLL}_i \quad (3)$$

Substituting (1) and (2) into (3) and rearranging terms,

$$\text{GrossEn}_i = \text{Loei2En}_i \times \text{LossRat} / (1 + \text{LossRat}) + \text{XYBEn}_i / (1 + \text{LossRat})$$

$$\text{PreGrossEn} = \text{GrossEn}_1 + \text{GrossEn}_2$$

(b) Determination of the Gross Electrical Energy in respect of the Generator System after the adjustment for AGC Failure Excess Energy or turn off the AGC Function

Let: PreGrossEn be, for a given period of time ΔT, the Gross Electrical Energy determined in accordance with Paragraph 1(C)(a) of Part II of Schedule 7; and

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AGCFailEn be the AGC Failure Excess Energy for such relevant given period of time  $\Delta T$  determined in accordance with Paragraph 4 of Part II of Schedule 7;

Then:  $GrossEn = PreGrossEn - AGCFailEn$

For the purpose of the adjustment, the period  $\Delta T$  shall comprise an integral number of 15-minute Logging Periods.

## 2 Determination of the Test Energy

The calculation for the Test Energy over a given period of time  $\Delta T$  shall be as follows:

Let:  $\Delta T$  be the given period of time starting at time  $T_s$  and ending at time  $T_e$ ;

UnitEn<sub>N</sub> be, for the given period of time  $\Delta T$ , the applicable values of the respective Meter Readings of the relevant energy meter of the Unit Metering System for such given Generating Unit N regardless of whether or not such electrical energy is associated with the relevant testing;

UnitEn be the Unit Electrical Energy associated with all Generating Units over the given period  $\Delta T$ , regardless of whether or not such electrical energy is associated with the relevant testing, as measured by the Unit Metering System at the respective Unit Metering Points;

$\Delta T_{jN}$  be the duration of a given test period comprised in  $\Delta T$  associated with the testing of Generating Unit N, starting at time  $T_{jsN}$  and ending at time  $T_{jeN}$  for such testing that occurs in accordance with Sections 2.10 and 2.11;

j be integers 1 to n;

N be integers 1 to 7;

n be the total number of such test periods that occur during the interval  $\Delta T$ ;

UnitTestEn<sub>jN</sub> be, for a given test period of time  $\Delta T_{jN}$ , the applicable values of the respective Meter Readings of the relevant energy meter of the Unit Metering System for such given Generating Unit N associated with such relevant testing that occurs in accordance with Sections 2.10 and 2.11;

UnitTestEn<sub>N</sub> be the electrical energy associated with all relevant testing of such given Generating Unit N over all test periods  $\Delta T_{jN}$  comprised in the period  $\Delta T$  as measured by the Unit Metering System at the Unit Metering Point;

UnitTestEn be the electrical energy associated with all relevant testing of all Generating Units over the given period of time  $\Delta T$  as measured by the Unit Metering System at the Unit Metering Point;

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PreGrossEn be the amount of electrical energy defined in Paragraph 1(C)(a) of Part II of Schedule 7; and

TestEn be the Test Energy determined at the Delivery Point over  $\Delta T$ ;

Then: (1) In respect of each Generating Unit N,

$$T_s \leq T_{1sN} < T_{1fN} < T_{2sN} < \dots < T_{nsN} < T_{nfN} \leq T_f$$

$$\text{UnitTestEn}_N = \sum \text{UnitTestEn}_{jN}$$

Where the summation is taken for  $j = 1$  to  $n$ .

(2) In respect of all Generating Units,

$$\text{UnitTestEn} = \sum \text{UnitTestEn}_N$$

$$\text{UnitEn} = \sum \text{UnitEn}_N$$

Where both summations are taken for  $N = 1$  to  $7$ .

(3)  $\text{TestEn} = \text{PreGrossEn} \times (\text{UnitTestEn} / \text{UnitEn})$

### 3 Determination of the Net Electrical Energy

Let: NetEn be the Net Electrical Energy at the Delivery Point net of any Test Energy for the relevant period  $\Delta T$ ;

GrossEn be the Gross Electrical Energy over the relevant period  $\Delta T$  determined in accordance with Paragraph 1(C)(c) of Part II of Schedule 7; and

TestEn be the Test Energy over the relevant period  $\Delta T$  determined in accordance with Paragraph 2 of Part II of Schedule 7;

Then: In respect of the period after the One Unit Operation Ready Date

$$\text{NetEn} = \text{GrossEn} - \text{TestEn}$$

### 4 Determination of AGC Failure Excess Energy

(A) Definition of the AGC Failure Excess Energy or turn off the AGC Function and its Effect

In the event that failure in respect of any Generating Unit occurs such that the active power set point issued by the NCC or BCC to such Generating Unit for the purpose of Automatic Generation Control cannot be processed or Automatic Generation Control is turned off, in respect of any Logging Period of fifteen (15) minutes during which the relevant failure occurs and continues,

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the Gross Electrical Energy deemed to have been delivered to the Delivery Point by such Generating Unit as per such Logging Period shall be capped at one hundred and two per cent (102%) of the amount of electrical energy Dispatched by EGAT for such Logging Period and such Generating Unit through voice or other agreed means of communication, determined on the basis of the relevant Meter Reading and Unit Dispatch Level for such Logging Period.

Such portion of electrical energy that has been delivered to the Delivery Point by such Generating Unit during such Logging Period that is in excess of such cap, aggregated for all 15-minute Logging Period comprised in a given period of time associated with the relevant AGC failure or AGC turned off, shall be defined as “**AGC Failure Excess Energy**”, which shall be deducted from the electrical energy that has been delivered to the Delivery Point by such Generating Unit during such period of time determined prior to such adjustment for the purposes of determining the Gross Electrical Energy.

(B) Determination of the AGC Failure Excess Energy

The AGC Failure Excess Energy over a given period of time  $\Delta T$  shall be as determined on the basis of all 15-minute Logging Periods comprised in such period of time  $\Delta T$  as follows:

Let:  $\Delta T$  be a given period of time comprising an integral number of 15-minute Logging Periods during which the Generating Unit N is associated with the relevant AGC failure;

$n$  be the number of 15-minute Logging Periods comprised in  $\Delta T$ ;

$UnitDisLev_{N_i}$  be the Unit Dispatch Level for Generating Unit N and Logging Period  $i$  (in MW);

$UnitEn_{N_i}$  be, for the given Logging Period  $i$ , the applicable value of the respective Meter Reading of the relevant energy meter of the Unit Metering System for such given Generating Unit N;

$UnitEn$  be the Unit Electrical Energy associated with all seven (7) Generating Units over the given period of time  $\Delta T$  determined in accordance with Paragraph 2 of Part II of Schedule 7, regardless of whether or not each such Generating Unit is associated with the relevant AGC failure, as measured by the Unit Metering System at the Unit Metering Point;

$PreGrossEn$  be the amount of electrical energy defined in Paragraph 1(C)(a) of Part II of Schedule 7;

$UnitDisEn_{N_i}$  be the amount of electrical energy referred to the relevant Unit Metering Point deemed to have been Dispatched by EGAT for

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such Generating Unit N and Logging Period i comprised in the given period  $\Delta T$ , determined on the basis of the Unit Dispatch Level for Generating Unit N and Logging Period i;

UnitAGCFailEn<sub>N</sub> be the electrical energy supplied by Generating Unit N at the respective Unit Metering Point that is in excess of the applicable cap, aggregated for all Logging Period i comprised in the given period  $\Delta T$ ; and

AGCFailEn be the AGC Failure Excess Energy for all seven (7) Generating Units and the given period  $\Delta T$ , being referred to at the Delivery Point;

$$\text{Then: UnitDisEn}_{Ni} = \text{UnitDisLev}_{Ni} \times (15 / 60)$$

$$\text{UnitAGCFailEn}_N = \sum \text{Max} [(\text{UnitEn}_{Ni} - 1.02 \times \text{UnitDisEn}_{Ni}), 0]$$

where the summation is taken for  $i = 1$  to  $n$  of the given period  $\Delta T$  for which AGC Failure Excess Energy occurs.

$$\text{AGCFailEn} = (\text{PreGrossEn} / \text{UnitEn}) \times \sum \text{UnitAGCFailEn}_N$$

where the summation is taken for all Generating Units N (N = any number between 1 and 7) during the relevant period of time  $\Delta T$  for which AGC Failure Excess Energy occurs.

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**Part III: Calculation of Active Power at the Delivery Point**

Part III of Schedule 7 sets out the formulae to be used for the determination of the average active power transmitted from the Generator System to the EGAT System over a given period of time and referred to the Delivery Point, based on the applicable values of the respective Meter Readings from the Metering Systems as provided in Part IV of Schedule 14 and taking into account the effect pursuant to the allocation of the Transmission Loss.

For the purpose of determining Registered Capacity upon Commissioning Testing, Annual Testing and Additional Testing or reassessment of Registered Stability Limit, the relevant Generating Units shall be Dispatched at a constant level of active power output for a given period of time during which the Automatic Generation Control function is turned off and the effects due to the Unit Primary Response are either eliminated or minimized.

Let: GrossEn be the Gross Electrical Energy (in MWh) over the relevant period  $\Delta T$  determined in accordance with Paragraph 1(C)(b) of Part II of Schedule 7;

$\Delta T$  be the relevant period of time (in minute); and

RegCap be the Registered Capacity (in MW) referred to at the Delivery Point;

Then:  $\text{RegCap} = (\text{GrossEn} \times 60) / \Delta T$

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**Part IV: Generator Forced Outage associated with  
Failure to Meet the Unit Dispatch Level**

Part IV of Schedule 7 sets out: (i) the condition for triggering the determination of a failure to meet the Unit Dispatch Level, as referred to in Section 3.6.5(d)(ii); and (ii) the determination of the Settlement Period Generation Shortfall associated with a Generator Forced Outage due to a given failure to meet the Unit Dispatch Level.

Part IV of Schedule 7 shall apply for any Settlement Period after the Commercial Operation Date and for any Generating Unit.

**1 Generator Forced Outage due to Failure to Meet the Unit Dispatch Level**

In respect of a Generating Unit which is Declared to be Available and not under testing and a Logging Period of one (1) minute, a Generator Forced Outage due to a failure to meet the Unit Dispatch Level for that Generating Unit shall occur if the active power output (in MW) derived from the Meter Reading at the Unit Metering Point for that Generating Unit and that Logging Period, taking into account any effect regarding Unit Loading Rate and Unit Deloading Rate due to the variation of Unit Dispatch Level and/or any effect regarding Unit Primary Response due to system frequency excursion, if applicable, is less than the Unit Dispatch Level for the same Logging Period, provided that the AGC is off for such Generating Unit during the whole of such Logging Period.

**2 Calculation of the Settlement Period Generation Shortfall associated with any failure to meet the Unit Dispatch Level**

The Settlement Period Generation Shortfall associated with any failure to meet the Unit Dispatch Level shall be determined on the basis of all 1-minute Logging Periods comprised in such Settlement Period as follows:

Let:  $UnitDisLev_{Ni}$  be the Unit Dispatch Level for Generating Unit N and Logging Period i of the Settlement Period (in MW);

$UnitDelLev_{Ni}$  be the active power output deemed to have been delivered by such Generating Unit N at the respective Unit Metering Point for Logging Period i of the Settlement Period (in MW), as logged by the Unit Metering System;

$UnitGenShort_{Ni}$  be the shortfall in generating capacity at the respective Unit Metering Point for Generating Unit N and Logging Period i of the Settlement Period;

$CondLog_{Ni}$  be a number equal to one (1) if the AGC is off for such Generating Unit N during the whole Logging Period i; and zero (0) otherwise;

$SetGenShort_N$  be the Settlement Period Generation Shortfall for Generating Unit N and the given Settlement Period, being referred to at the Delivery Point;

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UnitEn be the Unit Electrical Energy associated with all Generating Units over the given Settlement Period, regardless of whether or not each such Generating Unit is associated with the failure to meet the Unit Dispatch Level, as measured by the Unit Metering System at the respective Unit Metering Point; and

PreGrossEn be the amount of electrical energy defined in Paragraph 1(C)(a) of Part II of Schedule 7;

$$\text{Then: UnitGenShort}_{Ni} = \text{CondLog}_{Ni} \times \text{Max} [(\text{UnitDisLev}_{Ni} - \text{UnitDelLev}_{Ni}), 0]$$

$$\text{SetGenShort}_N = (\text{PreGrossEn} / \text{UnitEn}) \times \text{Max} (\text{UnitGenShort}_{Ni})$$

where the comparison of UnitGenShort<sub>Ni</sub> is taken for i = 1 to 60 of the given Settlement Period for which such failure to meet Unit Dispatch Level in respect of Generating Unit N occurs.

In respect of such Generator Forced Outage, the relevant Generating Unit N shall be deemed to be Available at the level of generating capacity (the “**Derated Capacity**”) equal to the relevant Registered Capacity in respect of such Generating Unit less the Settlement Period Generation Shortfall. Delivery of electrical energy at any level that is higher than the Derated Capacity after the occurrence of such failure to meet the Unit Dispatch Level shall have to be Dispatched by EGAT, after EGAT being notified by Generator of the time at which such Generating Unit is Available to be Dispatched at such higher level.

Generator shall be liable to pay liquidated damages associated with all Generator Forced Outage that results from such failure to meet the Unit Dispatch Level.

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**Part V : PAYMENTS IN RESPECT OF IMPORTED ENERGY****1. DETERMINATION OF THE IMPORTED ENERGY PAYMENTS**

The Generator shall pay for the Imported Energy referred to in Section 3.12 on a monthly basis as follows:

$$(a) \quad \text{ImEnPay} = (\text{D.C.} + \text{E.C.} + \text{R.C.} + \text{A.C.} + \text{S.C.})(1 + \text{VAT})$$

$$\text{D.C.} = \text{MaxDem} * \text{DemCharg}$$

$$\text{E.C.} = (\text{PeakImEn} * \text{PeakImEnCharg}) + (\text{OffPeakImEn} * \text{OffPeakImEnCharg})$$

$$\text{R.C.} = (\text{MaxReDem} - \text{AllowReDem}) * \text{ReDemCharg}$$

$$\text{A.C.} = (\text{PeakImEn} + \text{OffPeakImEn}) * \text{Ft}$$

where:

$\text{ImEnPay}$  = Payment made by the Generator to EGAT for the Imported Energy referred to in Section 3.12 for the given month (in Baht);

$\text{D.C.}$  = Demand Charge Payment based on the Time of Use Rate for the given month (in Baht);

$\text{MaxDem}$  = Maximum Demand in Peak Period (in kW);

$\text{DemCharg}$  = Demand Charge based on the Time of Use Rate (in Baht/kW);

$\text{E.C.}$  = Energy Charge Payment based on the Time of Use Rate for the given month (in Baht);

$\text{PeakImEn}$  = Imported Energy referred to in Section 3.12 for the given month that occurs during the Peak Period (in kWh);

$\text{PeakImEnCharg}$  = Energy Charge for Imported Energy referred to in Section 3.12 that occurs during the Peak Period (in Baht/kWh);

$\text{OffPeakImEn}$  = Imported Energy referred to in Section 3.12 for the given month that occurs during the Off Peak Period (in kWh);

$\text{OffPeakImEnCharg}$  = Energy Charge for Imported Energy referred

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	to in Section 3.12 that occurs during the Off Peak Period (in Baht/kWh);
R.C.	= Reactive Power Demand Charge Payment for the given month (in Baht);
MaxReDem	= the maximum value of all 15-minute reactive power demands in a given month (in kilovar);
AllowReDem	= the allowed value of all 15-minute reactive power demands in a given month (in kilovar), being equal to 61.97% of the maximum value of all 15-minute active power demands (in kilowatt) for such month;
ReDemCharg	= the rate for excess reactive power demand charge payment, being equal to 14.02 Baht per kilovar as of the Execution Date, to be revised from time to time by EGAT;
A.C.	= Tariff Adjustment Payment based on the Time of Use Rate for the given month (in Baht);
Ft	= Automatic Tariff Adjustment Charge based on the Time of Use Rate (in Baht/kWh), to be revised and notified by EGAT from time to time;
S.C.	= Service Charge Payment based on the Time of Use Rate for the given month (in Baht); and
VAT	= the rate of the Value Added Tax promulgated by the Thai Government for the purchase of electrical energy at the border, which is charged at the rate of 0% (zero percent) at the Execution Date but is subject to the revision of the Thai Government from time to time,

provided that:

- (1) the minimum payment made by the Generator to EGAT in respect of the Demand Charge Payment (D.C.) and Energy Charge Payment (E.C.) comprised in the formula of Imported Energy Payment referred to in Section 3.12 for a given month, excluding the effects of all other components comprised therein, shall not be lower than 70% of the maximum value of all Demand Charge Payments that have occurred during the last 12 calendar months (including the current month). Except for

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the first 11 months period from the first month which Imported Energy occurred, the minimum charge shall be applied from the third month and shall not be lower than 70% of the maximum billing demand charge during the preceding months including the current month; and

- (2) the amount of (MaxReDem - AllowReDem) shall be determined to the nearest whole kilovar and discarding the fraction of 0.5 kVar.

## 2. TIME OF USE TARIFF

The Time of Use Tariff, which is based on TOU rate of Thailand High Voltage Large General Service Category and adjusted by transferred energy charge 0.1459 Baht/kWh, is as follows:

Demand Charge (Baht/kW/Month)	Energy Charge (Baht/kWh)		Service Charge (Baht/Month)
	Peak	Off Peak	
74.14	2.7595	1.3185	228.17

Peak : 09.00-22.00 hrs. Monday – Friday

Off Peak : 22.00-09.00 hrs. Monday – Friday

: 00.00-24.00 hrs. Saturday – Sunday, National Labour Day and normal public holidays of Thailand (excluding substitution days and Royal Ploughing Ceremony Day).

In the event that there is any change regarding the Time of Use Tariff or transferred energy charge in the tariff structure of Thailand, the Imported Energy charge shall be automatically adjusted to reflect such changes. Time of Use Tariff will be revised from time to time by EGAT.

## 3. RELATED MATTERS

3.1 The determination of Imported Energy provided in Section 5.6.1 shall be based on metered values recorded by the Loei 2 Metering System and the Xayaburi Metering System, being referred to at the Delivery Point.

3.2 Statements and payments under Section 5.6.1 shall be made in accordance with Sections 6 and 7.

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#### 4. CALCULATION EXAMPLES

##### Example of Electricity Billing for Import Energy

##### at Delivery Point

for the month of November, 2005

##### Case 1 : Demand Charge+Energy Charge is less than Minimum Charge

##### 1. Demand Charge Payment

Maximum Demand in Peak Period	500.00	kW	
Demand Charge	<u>74.14</u>	Baht/kW	
Demand Charge Payment	<u>37,070.00</u>	Baht	[ 500.00 kW * 74.14 Baht/kW ] [1]

##### 2. Energy Charge Payment

Periods	Energy (kWh)	Energy Charge (Baht/kWh)	Energy Payment (Baht)
Peak	150,000	2.7595	413,925.00
Off-Peak	200,000	1.3185	263,700.00
Sub Total	350,000		677,625.00

[2]

Demand Charge Payment + Energy Charge Payment	=	37,070.00+677,625.00	
	=	714,695.00	Baht [3]
Minimum Payment	=	986,062.00	Baht/Month [4]
(70% Maximum Billing Demand Charge of the Preceding 12 Months)			

##### 3. Tariff Adjustment Payment

Total Energy Consumption	350,000	kWh	
Automatic Tariff Adjustment Charge (Ft)	<u>0.9255</u>	Baht/kWh	
Tariff Adjustment Payment	<u>323,925.00</u>	Baht	[ 350,000 kWh * 0.9255 Baht/kWh ] [5]

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## 4. Reactive Power Demand Charge Payment

Actual Maximum Reactive Power	320	kVAr		
Allowed Reactive Power	<u>310</u>	kVAr	[ at 61.97% of Max. Demand (0.85 P.F.) ]	
Excess Reactive Power	<u>10</u>	kVAr	[ 320 - 310 kVAr ]	
Reactive Power Demand Charge	<u>14.02</u>	Baht/kVAr/Month		
Reactive Power Demand Charge Payment	<u>140.20</u>	Baht	[ 10 kVAr * 14.02 Baht /kVAr ]	[6]

5. Service Charge Payment 228.17 Baht/Month [7]

6. Value Added Tax (VAT) 0% 0.00 Baht [8]

7. Total Payment ([4]+[5]+[6]+[7]+[8]) 1,310,355.37 Baht or 3.7439 Baht/kWh

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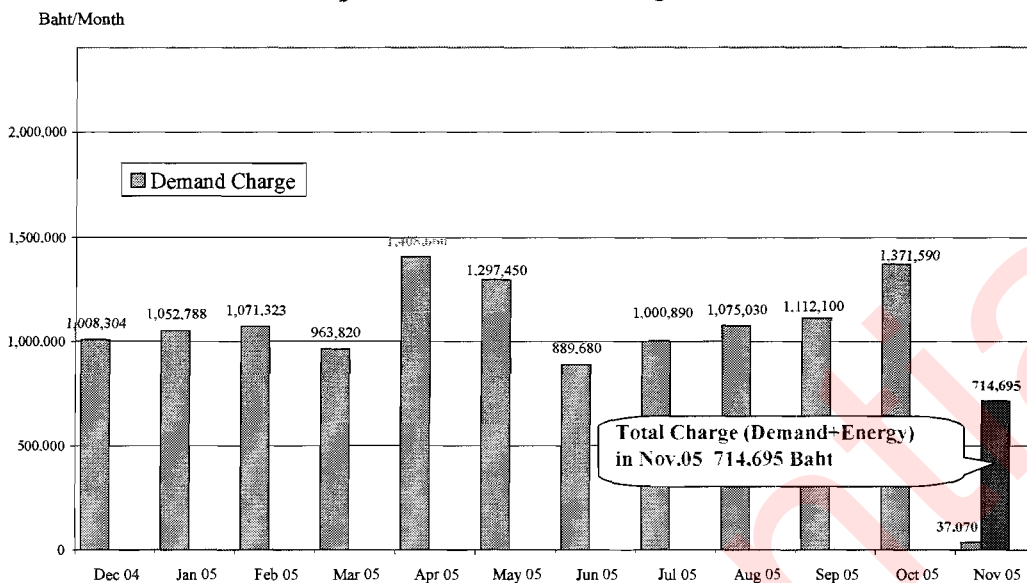
	Month	Maximun Demand (kW)	Demand Charge (Baht/month) at 74.14	
				Baht/kW/month.
1	Dec 04	13,600		1,008,304
2	Jan 05	14,200		1,052,788
3	Feb 05	14,450		1,071,323
4	Mar 05	13,000		963,820
5	Apr 05	19,000		1,408,660
6	May 05	17,500		1,297,450
7	Jun 05	12,000		889,680
8	Jul 05	13,500		1,000,890
9	Aug 05	14,500		1,075,030
10	Sep 05	15,000		1,112,100
11	Oct 05	18,500		1,371,590
12	Nov 05	500		37,070

Maximum Demand Charge during December 2004 to November 2005 is 1,408,660 Baht. But the Demand Charge + Energy Charge for November 2005 is 714,695.00 Baht which is less than 70% of 1,408,660 Baht (986,062 Baht). Therefore, the minimum charge before adjusted by Ft, P.F. etc. for November 2005 shall be 986,062 Baht.

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Example of Minimum Charge for Nov. 05



Example of Electricity Billing for Import Energy  
at Delivery Point  
for the month of November, 2005

Case 2 : Demand Charge+Energy Charge is higher than Minimum Charge

1. Demand Charge Payment

Maximum Demand in Peak Period	10,000.00	kW	
Demand Charge	74.14	Baht/kW	
Demand Charge Payment	<u>741,400.00</u>	Baht	[ 10,000.00 kW * 74.14 Baht/kW ]

[1]

2. Energy Charge Payment

Periods	Energy (kWh)	Energy Charge (Baht/kWh)	Energy Payment (Baht)
Peak	3,000,000	2.7595	8,278,500.00
Off-Peak	3,000,000	1.3185	3,955,500.00
Sub Total	6,000,000		12,234,000.00

[2]

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Demand Charge Payment + Energy Charge Payment	=	741,400.00+12,234,000.00		
	=	12,975,400.00	Baht	[3]
Minimum Payment	=	986,062.00	Baht/Month	[4]
(70% Maximum Billing Demand Charge of the Preceding 12 Months)				

## 3. Tariff Adjustment Payment

Total Energy Consumption	6,000,000	kWh		
Automatic Tariff Adjustment Charge (Ft)	<u>0.9255</u>	Baht/kWh		
Tariff Adjustment Payment	<u>5,553,000.00</u>	Baht	[ 6,000,000 kWh * 0.9255 Baht/kWh ]	[5]

## 4. Reactive Power Demand Charge Payment

Actual Maximum Reactive Power	6,397	kVAr		
Allowed Reactive Power	<u>6,197</u>	kVAr	[ at 61.97% of Max. Demand (0.85 P.F.) ]	
Excess Reactive Power	<u>200</u>	kVAr	[ 6,397 - 6,197 kVAr ]	
Reactive Power Demand Charge	<u>14.02</u>	Baht/kVAr/Month		
Reactive Power Demand Charge Payment	<u>2,804.00</u>	Baht	[ 200 kVAr * 14.02 Baht /kVAr ]	[6]

5. Service Charge Payment 228.17 Baht/Month [7]

6. Value Added Tax (VAT) 0% 0.00 Baht [8]

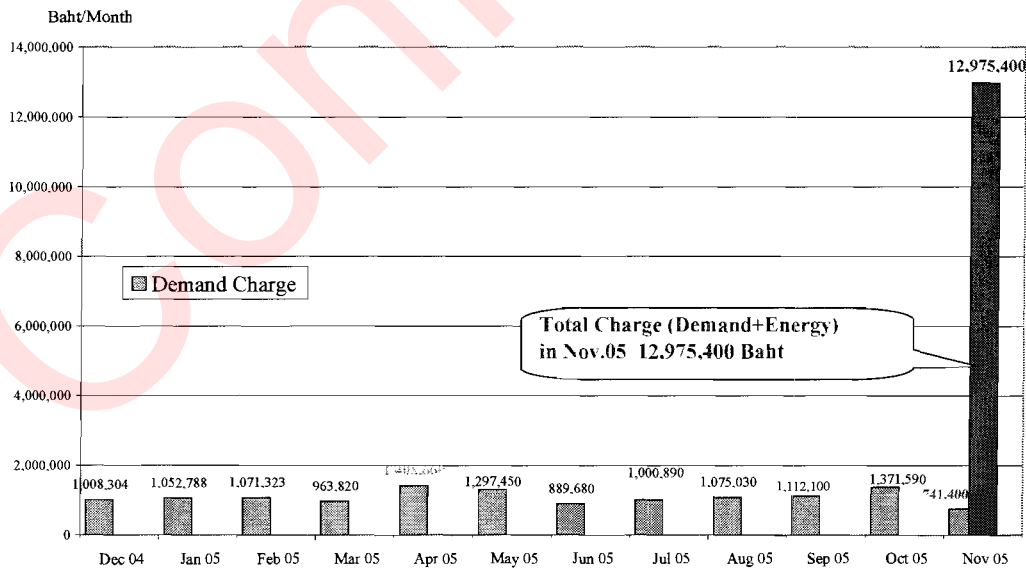
7. Total Payment ([3]+[5]+[6]+[7]+[8]) 18,531,432.17 Baht or 3.0886 Baht/kWh

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Month	Maximun Demand (kW)	Demand Charge (Baht/month) at 74.14	
		Baht/kW/month.	
1	Dec 04	13,600	1,008,304
2	Jan 05	14,200	1,052,788
3	Feb 05	14,450	1,071,323
4	Mar 05	13,000	963,820
5	Apr 05	19,000	1,408,660
6	May 05	17,500	1,297,450
7	Jun 05	12,000	889,680
8	Jul 05	13,500	1,000,890
9	Aug 05	14,500	1,075,030
10	Sep 05	15,000	1,112,100
11	Oct 05	18,500	1,371,590
12	Nov 05	10,000	741,400

Maximum Demand Charge during December 2004 to November 2005 is 1,408,660Baht. But the Demand Charge + Energy Charge for November 2005 is 12,975,400.00 Baht which is higher than 70% of 1,408,660Baht (986,062 Baht). Maximum Demand Charge during December 2004 to November 2005 is 1,408,660 Baht. But the Demand Charge + Energy Charge for November 2005 is 714,695.00 Baht which is less than 70% of 1,408,660 Baht (986,062 Baht). Therefore, the minimum charge before adjusted by Ft, P.F. etc. for November 2005 shall be 986.062 Baht.

Example of Minimum Charge for Nov. 05



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**Schedule 8****ACCOUNTING OF DELAY IN COMMENCING  
POST-ENERGIZATION COMMISSIONING****1 Definitions**

- (i) Subject to any adjustment in respect of Excused FM Delay provided in Paragraph 6 of Schedule 8, the “**EGAT Delay in EIRD**” shall be defined as the duration (in number of days) of the period starting from (and including) SEIRD until (but excluding) EIRD and shall include any delay due to an EGAT Force Majeure or a Thai Political Force Majeure.
- (ii) Subject to any adjustment in respect of Excused FM Delay provided in Paragraph 6 of Schedule 8, the “**Generator Delay in SIRD**” shall be defined as the duration (in number of days) of the period starting from (and including) SGIRD until (but excluding) GIRD and shall include any delay due to a Generator Force Majeure or a Lao Political Force Majeure.
- (iii) The “**EGAT Attributed Delay in CIRD**” shall be the responsibility (in number of days) of the delay in achieving CIRD by SCIRD which is attributed to EGAT.
- (iv) The “**Generator Attributed Delay in CIRD**” shall be the responsibility (in number of days) of the delay in achieving CIRD by SCIRD which is attributed to Generator.
- (v) Subject to any adjustment in respect of Excused FM Delay provided in Paragraph 6 of Schedule 8, the “**EGAT Delay in ECRD**” shall be defined as the duration (in number of days) of the period starting from (and including) SECRD until (but excluding) ECRD and shall include any delay due to an EGAT Force Majeure or a Thai Political Force Majeure.
- (vi) Subject to any adjustment in respect of Excused FM Delay provided in Paragraph 6 of Schedule 8, the “**Generator Delay in SCR D**” shall be defined as the duration (in number of days) of the period starting from (and including) SGCRD until (but excluding) GCRD and shall include any delay due to a Generator Force Majeure or a Lao Political Force Majeure.
- (vii) The “**EGAT Attributed Delay in CD**” shall be the responsibility (in number of days) of the delay in achieving CD by SCD which is attributed to EGAT.
- (viii) The “**Generator Attributed Delay in CD**” shall be the responsibility (in number of days), of the delay in achieving CD by SCD which is attributed to Generator.

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**2 Accounting of delay in CIRD**

- (a) If CIRD occurs on or before SCIRD, any EGAT Delay in EIRD and Generator Delay in GIRD, as applicable, shall be reset to zero.
- (b) If CIRD occurs later than SCIRD, the EGAT Delay in CIRD and the Generator Delay in CIRD shall be accounted as follows:

Let: AtECIRDDelay be the EGAT Attributed Delay in CIRD;

AtGCIRDDelay be the Generator Attributed Delay in CIRD;

EIRDDelay be the EGAT Delay in EIRD;

GIRD Delay be the Generator Delay in GIRD;

AllowStringDur be the duration that is allowed for the completion of the stringing work in respect of the Common Interconnection Facilities, defined as the duration in number of days of the period starting from (and including) SGIRD until (but excluding) SCIRD;

ActStringDur be the actual duration (in number of days) of the period starting from (and including) the later of EIRD and GIRD until (but excluding) CIRD;

StringDelay be the number of days that ActStringDur is greater than AllowStringDur, subject to any adjustment in respect of Excused FM Delay provided in Paragraph 6 of Schedule 8; and

StringBonus be the number of days that ActStringDur is less than AllowStringDur;

Then: StringBonus = Max [(AllowStringDur – ActStringDur), 0]

StringDelay = Max [(ActStringDur - AllowStringDur), 0]

AtECIRDDelay = Max [(EIRDDelay – StringBonus), 0]

AtGCIRDDelay = Max [(GIRD Delay - StringBonus), 0] + StringDelay

**3 Accounting of delay in CD**

The responsibilities for any delay in achieving CD by SCD shall be accounted as follows:

Let: AtECDDelay be the EGAT Attributed Delay in CD;

AtGCDDelay be the Generator Attributed Delay in CD;

AtECIRDDelay and AtGCIRDDelay be the values determined in Paragraph 2(b) of Schedule 8;

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ECRDDelay be the EGAT Delay in ECRD; and

GCRDDelay be the Generator Delay in GCRD;

Then:  $AtECDDelay = \text{Max} (ECRDDelay, AtECIRDDelay)$

$AtGCDDelay = \text{Max} (GCRDDelay, AtGCIRDDelay)$

#### 4 Accounting of delay in ED

- (a) If ED occurs on or before SED, any EGAT Attributed Delay in CD and Generator Attributed Delay in CD, as applicable, shall be reset to zero.
- (b) The completion of the Pre-Energization Commissioning shall mean the occurrence of the Acceptance Date for all the Certificates of Readiness for Energization referred to in Section 2.10.4(c).
- (c) When the actual duration that is required for the completion of the Pre-Energization Commissioning is less than sixty (60) days, a bonus in completing the Pre-Energization Commissioning (the “**Bonus in Completing PreECP**”) shall be accounted as follows:

Let: ActPreECPDur be the actual duration in number of days of the period starting from (and including) the Connection Date until (but excluding) the Energization Date; and

PreECPBonus be the Bonus in Completing PreECP;

Then:  $\text{PreECPBonus} = \text{Max} [(60 - \text{ActPreECPDur}), 0]$

- (d) If both:
- (i) ED occurs later than SED by more than fifteen (15) days; and
- (ii) the actual duration that is required for the completion of the Pre-Energization Commissioning exceeds seventy-five (75) days,

then:

- (1) the delay in completing the Pre-Energization Commissioning (the “**Delay in Completing PreECP**”) shall be accounted as follows:

Let: ActPreECPDur be the actual duration in number of days of the period starting from (and including) the Connection Date until (but excluding) the Energization Date; and

PreECPDelay be the Delay in Completing PreECP;

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Then:  $\text{PreECPDelay} = \text{Max} [(\text{ActPreECPDur} - 75), 0]$

- (2) the “**EGAT Attributed Delay in Completing PreECP**” shall be defined as any delay in completing the Pre-Energization Commissioning that is apportioned to EGAT; and
- (3) the “**Generator Attributed Delay in Completing PreECP**” shall be defined as any delay in completing the Pre-Energization Commissioning that is apportioned to Generator.

Such apportionment shall be determined by agreement between the Parties or, failing such agreement within thirty (30) days from the ED, by arbitration pursuant to Section 13.2.

- (e) The respective responsibilities of EGAT and Generator in the delay in achieving ED by the SED (the “**EGAT Attributed Delay in ED**” and the “**Generator Attributed Delay in ED**”, respectively) shall be accounted as follows:

Let:  $\text{AtEEDDelay}$  be the EGAT Attributed Delay in ED;

$\text{AtGEDDelay}$  be the Generator Attributed Delay in ED;

$\text{AtECDDelay}$  and  $\text{AtGCDDelay}$  be the values determined in Paragraph 3 of Schedule 8;

$\text{PreECPBonus}$  be the Bonus in Completing PreECP determined in Paragraph 4(c) of Schedule 8;

$\text{AtEPreECPDelay}$  be the EGAT Attributed Delay in Completing PreECP defined in Paragraph 4(d)(2) of Schedule 8; and

$\text{AtGPreECPDelay}$  be the Generator Attributed Delay in Completing PreECP defined in Paragraph 4(d)(3) of Schedule 8.

Then:  $\text{AtEEDDelay} = \text{Max} [(\text{AtECDDelay} - \text{PreECPBonus}), 0] + \text{AtEPreECPDelay}$

$\text{AtGEDDelay} = \text{Max} [(\text{AtGCDDelay} - \text{PreECPBonus}), 0] + \text{AtGPreECPDelay}$

- (f) (i) The EGAT Energization Ready Date shall be the SED plus EGAT Attributed Delay in ED; and
- (ii) The Generator Energization Ready Date shall be the SED plus Generator Attributed Delay in ED.

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## 5 Accounting of EGAT Relative Delay in Commencing Post-Energization Commissioning

### (A) Accounting of EGAT Relative Delay in Commencing Post-Energization Commissioning in respect of the First Generating Unit

- (a) On the later of ED and CRD<sub>1</sub>, the respective responsibilities of EGAT and Generator for any delay in commencing the Post-Energization Commissioning of the First Generating Unit (the “**EGAT Absolute Delay in Commencing PostECP<sub>1</sub>**” and the “**Generator Absolute Delay in Commencing PostECP<sub>1</sub>**”, respectively) shall be accounted as follows:
- (i) the EGAT Absolute Delay in Commencing PostECP<sub>1</sub> shall be equal to the EGAT Attributed Delay in ED; and
  - (ii) the Generator Absolute Delay in Commencing PostECP<sub>1</sub> shall be the greater of:
    - (1) the Generator Attributed Delay in ED; and
    - (2) the “**Generator Delay in CRD<sub>1</sub>**”, being the duration in number of days of the period starting from (and including) the SCRD<sub>1</sub> until (but excluding) the CRD<sub>1</sub>, subject to any adjustment in respect of Excused FM Delay provided in Paragraph 6 of Schedule 8.
- (b) Upon the determination of the EGAT Absolute Delay in Commencing PostECP<sub>1</sub> and the Generator Absolute Delay in Commencing PostECP<sub>1</sub>, the following shall be determined:
- (i) the “**EGAT Relative Delay in Commencing PostECP<sub>1</sub>**” being the greater of:
    - (1) the EGAT Absolute Delay in Commencing PostECP<sub>1</sub> less the Generator Absolute Delay in Commencing PostECP<sub>1</sub>; and
    - (2) zero.
  - (ii) “**GSCOD**” as at the later of ED and CRD<sub>1</sub>, being the date falling on SCOD plus the Generator Absolute Delay in Commencing PostECP<sub>1</sub>;
  - (iii) “**ESCOD**” as at the later of ED and CRD<sub>1</sub>, being the date falling on SCOD plus the EGAT Absolute Delay in Commencing PostECP<sub>1</sub>;

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- (iv) “**EGAT FMOA Limit**” as at the later of ED and CRD<sub>1</sub>, being the total period accounted as EGAT Force Majeure and Thai Political Force Majeure that is associated with the EGAT Absolute Delay in Commencing PostECP<sub>1</sub> referred to in Paragraph 5(A)(a) above; and
  - (v) “**Generator FMOA Limit**” as at the later of ED and CRD<sub>1</sub>, being the total period accounted as Generator Force Majeure and Lao Political Force Majeure that is associated with the Generator Absolute Delay in Commencing PostECP<sub>1</sub> referred to in Paragraph 5(A)(a) above which is in excess of the EGAT Relative Delay in Commencing PostECP<sub>1</sub>.
- (B) Accounting of EGAT Relative Delay in Commencing Post-Energization Commissioning in respect of the Second Generating Unit, the Third Generating Unit, the Fourth Generating Unit, the Fifth Generating Unit, the Sixth Generating Unit and the Seventh Generating Unit

In respect of any N<sup>th</sup> Generating Unit other than the First Generating Unit, the “**EGAT Relative Delay in Commencing PostECP<sub>N</sub>**” (where N = 2, 3, 4, 5, 6 or 7) shall be defined on a Unit by Unit basis as the number of days that the EGAT Energization Ready Date occurs after the latest to occur of:

- (i) the Generator Energization Ready Date;
- (ii) SCRD<sub>N</sub>; and
- (iii) CRD<sub>N</sub>.

For the avoidance of doubt, in the event that the EGAT Energization Ready Date occurs earlier than the latest of the three dates referred to above, the EGAT Relative Delay in Commencing PostECP<sub>N</sub> shall be equal to zero.

## 6 Adjustment for delays due to Excused FM Delay

In respect of a given Milestone Date, in the event that any of the following events occurs:

- (i) there is a delay in Generator’s achievement for such Milestone Date due to Thai Political Force Majeure;
- (ii) there is a delay in EGAT’s achievement for such Milestone Date due to Lao Political Force Majeure; and
- (iii) there are both a delay in Generator’s achievement for such Milestone Date due to Thai Political Force Majeure and a delay in EGAT’s achievement for the same Milestone Date due to Lao Political Force Majeure;

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(in each case, an “**Excused FM Delay**”), the delay of the relevant Party in the achievement of such Milestone Date shall be adjusted as follows:

Let: ToGDelay be the total duration (in number of days) of Generator’s delay in achieving the given Milestone Date before adjustment for the portion of that delay associated with the effect of Excused FM Delays;

ToEDelay be the total duration (in number of days) of EGAT’s delay in achieving the given Milestone Date before adjustment for the portion of that delay associated with the effect of Excused FM Delays;

GExDelay be the duration (in number of days) of Generator’s delay in achieving the given Milestone Date due to such Thai Political Force Majeure affecting Generator;

EExDelay be the duration (in number of days) of EGAT’s delay in achieving the given Milestone Date due to such Lao Political Force Majeure affecting EGAT;

GNetDelay be the duration (in number of days) of Generator’s delay in achieving the given Milestone Date net of the effect of any Thai Political Force Majeure;

ENetDelay be the duration (in number of days) of EGAT’s delay in achieving the given Milestone Date net of the effect of any Lao Political Force Majeure;

AdjGDelay be the duration (in number of days) of Generator’s delay in achieving the given Milestone Date after adjustment for the delay associated with the effect of Excused FM Delays; and

AdjEDelay be the duration (in number of days) of EGAT’s delay in achieving the given Milestone Date after adjustment for the delay associated with the effect of Excused FM Delays;

$$\begin{aligned}
 \text{Then: } GNetDelay &= ToGDelay - GExDelay \\
 ENetDelay &= ToEDelay - EExDelay \\
 AdjGDelay &= GNetDelay + EExDelay \\
 &\quad - \text{Max} [(GNetDelay - ENetDelay), 0] \\
 AdjEDelay &= ENetDelay + GExDelay \\
 &\quad - \text{Max} [(ENetDelay - GNetDelay), 0]
 \end{aligned}$$

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**Schedule 9****TERMINATION PAYMENT  
IN RESPECT OF FORCE MAJEURE AND EVENTS OF DEFAULT**

This Schedule 9 specifies the amount and manner of calculation of the Termination Payment that is to be paid by one Party to the other in the event that the Agreement is terminated as the result of the occurrence of a Force Majeure or an Event of Default. This Schedule 9 is to be applied in conjunction with and is subject to the requirements of Section 17.12.

**Part I: Definitions**

Unless otherwise defined herein, capitalized terms used herein shall have the meanings assigned to such terms in Section 1.1 of the Agreement to which this Schedule 9 is attached.

For purposes of this Schedule 9 only, the following terms shall have the meanings as set forth below:

**Administration Costs or AC** EGAT internal administration costs of the Agreement incurred as at the Term Termination Date, being two percent (2.00%) of the aggregate sum of the EGAT Transmission Facilities Cost;

**Base Case Financial Model** The base case of the financial model as agreed between Generator and the Lenders at or before the Financial Close Date, a copy of which has been identified as such and provided to EGAT by or on behalf of the Lenders no later than fifteen (15) days after the Financial Close Date;

**Capacity Value or CV** The aggregate of USD 89 per kW and THB 3,382 per kW as escalated from 1 January, 2002 by 1.38% per year, multiplied by the Term End Factor defined as follows:

- (i) Term End Factor = 1 if the period starting from (and including) the Term Termination Date until (and including) the Scheduled Termination Date is equal to or greater than sixty (60) Full Calendar Months; or
- (ii) Term End Factor = TermEndDur/1,826 if the period starting from (and including) the Term Termination Date until (and including) the Scheduled Termination Date is less than sixty (60) Full Calendar Months, and where TermEndDur shall be the number of days comprised in such period;

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Termination Payment in respect of Force Majeure and Events of DefaultSchedule 9

<b>Company Termination Event</b>	The term shall have the meaning as defined in Clause 11.4 of the Concession Agreement;
<b>Consultants' Fees or CF</b>	USD 500,000;
<b>Contracted Capacity or CC</b>	1,220,000 kW;
<b>Counterparty Outstanding Payments or COP</b>	In respect of a termination of this Agreement due to an EGAT Event of Default, an EGAT Force Majeure affecting the acquisition of the EGAT Access Rights or a Thai Political Force Majeure, all amounts due and payable but unpaid by the GOL to Generator in respect of the Generator Assets under the Concession Agreement up to the earlier to occur of: (i) the date of payment of the Termination Payment; and (ii) the Scheduled Termination Payment Date, which have been certified by both Generator and the GOL prior to the calculation of the Termination Payment in accordance with Paragraph 2 of Part III of Schedule 9 as being not involving any unresolved dispute under the Concession Agreement, provided that such Counterparty Outstanding Payments shall exclude any amount that is due and payable by the GOL in respect of a Force Majeure or a Company Termination Event or an Government Termination Event (including any amount that is due and payable by the GOL in respect of any change in the Laws of the Lao PDR);
<b>Discount Rate or DR</b>	Ten percent (10%);
<b>EGAT Transmission Facilities Cost or TLC</b>	The actual cost incurred by EGAT for the design, procurement, construction and Commissioning Testing of the EGAT Transmission Facilities, as is required for the connection of the Generator System with the EGAT System. Such EGAT Transmission Facilities Cost shall be certified by EGAT to Generator at the earlier to occur of: (i) the Commercial Operation Date; and (ii) the Term Termination Date, which shall be reduced on a straight line basis from the Commercial Operation Date such that its value would become zero by the Scheduled Termination Date;

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**Generator Outstanding Payments or GOP**

In respect of a termination of this Agreement due to an EGAT Event of Default, an EGAT Force Majeure affecting the acquisition of the EGAT Access Rights or a Thai Political Force Majeure, all amounts due and payable but unpaid by Generator to the GOL in respect of the Generator Assets under the Concession Agreement up to the earlier to occur of: (i) the date of payment of the Termination Payment; and (ii) the Scheduled Termination Payment Date, which have been certified by both Generator and the GOL prior to the calculation of the Termination Payment in accordance with Paragraph 2 of Part III of Schedule 9 as being not involving any unresolved dispute under the Concession Agreement;

**Government Termination Event**

The term shall have the meaning as defined in Clause 11.5 of the Concession Agreement;

**Historic Operating Performance Factor**

The fraction, as calculated on the Term Termination Date,

- (i) the numerator of which is the Registered Capacity in kW, and
- (ii) the denominator of which is 1,220,000 kW;

**Interest on Paid Equity Contribution or IE**

The sum in USD of:

- (i) sixty percent (60%) of the Paid Equity Contribution multiplied by a factor equal to LIBOR plus two percent (2%), and
- (ii) forty percent (40%) of the Paid Equity Contribution multiplied by: (i) a factor equal to Minimum Overdraft Rate plus two percent (2%); and (ii) a fraction the numerator of which is equal to the Reference Exchange Rate and the denominator of which is equal to the Prevailing Exchange Rate.

Such interest shall be accrued for the period starting from (and including) the date of injection of the Paid Equity Contribution until (and including) the Term Termination Date;

**Liquid Assets or LA**

The cash deposits at banks and in hand and short term (less than one year) liquid securities, including any Insurance proceeds;

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**Lost Capacity Payment or LC**

A payment in an amount that shall be calculated as follows:

- (i) in respect of a termination of the Agreement that occurs before the Commercial Operation Date, the Contracted Capacity multiplied by the corresponding Capacity Value; and
- (ii) in respect of a termination of the Agreement that occurs after the Commercial Operation Date, the Registered Capacity multiplied by the corresponding Capacity Value;

**Lost Equity Return or LER**

For a period after the Term Termination Date the duration of which is equal to the lesser of: (i) five (5) years; and (ii) the remainder of the Term (as such Term may be extended due to the occurrence of Force Majeure in accordance with this Agreement), the sum of the stream of dividends, as such dividends were projected in the Base Case Financial Model for such period multiplied by the Historic Operating Performance Factor, discounted to its present value by applying the Discount Rate;

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In respect of a termination that occurs prior to the Commercial Operation Date,

- (i) for any termination prior to the Scheduled Commercial Operation Date, the number of Full Calendar Months between the Term Termination Date and the Scheduled Commercial Operation Date, such number being expressed in a fraction in the event that the Financial Close Date is not the numerically corresponding day of the Term Termination Date; or
- (ii) for any termination on or after the Scheduled Commercial Operation Date, zero (0);

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**Paid Equity Contribution  
or E**

The aggregate investment (expressed in US Dollars) of all actual equity contributions invested by the shareholders in, and shareholder loans to, Generator (including any investment made in accordance with any sponsor support agreement), plus the summation of:

- (i) any additional equity amounts that are contributed or additional shareholder loans that are made by the Shareholders to Generator, expressed in US Dollars, for additional working capital and capital repairs, modification and improvements which are required by the Agreement to be incurred or undertaken by Generator as the result of any Change-in-Law or Change of Grid Code, Force Majeure and/or Prudent Utility Practice; and
- (ii) any additional equity contributions by the shareholders to Generator that have been pre-approved in writing by EGAT;

**Registered Capacity or RC**

The Registered Capacity in effect immediately prior to the Term Termination Date;

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**Residual Value or RV**

The residual value of the EGAT Transmission Facilities as determined by the Valuer pursuant to Paragraph 5 of Part III of this Schedule 9 and in accordance with the following:

- (i) if the Valuer determines that the EGAT Transmission Facilities have utilization value to EGAT at their existing location after the Term Termination Date and the removal of the equipment comprised in the EGAT Transmission Facilities from such existing location is not required, the “**Residual Value**” of the EGAT Transmission Facilities shall be the remaining utilization value of the EGAT Transmission Facilities to the EGAT System; or
- (ii) if the Valuer determines that the EGAT Transmission Facilities have no utilization value to EGAT at their existing location after the Term Termination Date, the “**Residual Value**” or “**RV**” of the EGAT Transmission Facilities shall be determined by the Valuer on the basis of an “Open Market Value” valuation (as detailed in the RICS Appraisal and Valuation issued by the Royal Institute of Chartered Surveyors (First Edition with First Amendment)), being determined by the Valuer to be the sum of:
  - (a) the value of all EGAT’s right, title and interest in and to the land on which the EGAT Transmission Facilities are situated and all buildings, site works and fixtures thereon (except for any of such items as may by their nature be valued under paragraph (b) below); and
  - (b) the value of all equipment owned by EGAT and comprised in the EGAT Transmission Facilities;

in each case excluding any physical damage or loss suffered by the EGAT Transmission Facilities that remains unrepaired at the Term Termination Date (in so far as such loss or damage was directly attributable to a Generator Event of Default, a Generator Force Majeure or a Lao Political Force Majeure giving rise to the termination), and provided that in no case shall the Residual Value be less than zero;

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**Valuer** An independent firm that is a member of the Royal Institute of Chartered Surveyors to be appointed to certify the Residual Value as of the Term Termination Date; and

**Y** In respect of a termination that occurs after the Commercial Operation Date,

- (i) for any termination after the Commercial Operation Date, the number of years between the Commercial Operation Date and the Term Termination Date, such number being expressed in a fraction in the event that the Term Termination Date is not the anniversary date of the Commercial Operation Date; or
- (ii) for any termination prior to the Commercial Operation Date, zero (0).

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**Part II: Determination of the Termination Payment**

The Termination Payment that either EGAT must pay to Generator or Generator must pay to EGAT pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 upon termination of this Agreement due to the occurrence of, as the case may be, a Force Majeure or an Event of Default shall be, subject to the terms of Sections 17.12.2(b) and 17.12.2(e), as set forth in the following table:

	<b>Termination Payment to be made by EGAT</b>	<b>Termination Payment to be made by Generator</b>
<b>A. Termination due to Events of Default</b>		
A.1 Termination prior to Financial Close Date due to Generator Event of Default	None.	EGAT retains full amount of the Development Security. No additional compensation.
A.2 Termination prior to Financial Close Date due to EGAT Event of Default	None and EGAT returns the full amount of the Development Security then in effect to Generator.	None.
A.3 Termination after Financial Close Date but before the Commercial Operation Date due to Generator Event of Default	None when EGAT does not elect to acquire the Generator Assets.	If EGAT elects not to acquire the Generator Assets, then Generator is obliged to pay $TLC + AC + CF + [CC * CV * (90-M)/90] - RV$ .
	If EGAT elects to acquire the Generator Assets, then EGAT is obliged to pay D upon its acquisition of the Generator Assets.	If EGAT elects to acquire the Generator Assets, then Generator shall not make Termination Payment.
A.4 Termination after Financial Close Date but before the Commercial Operation Date due to EGAT Event of Default	EGAT is obliged to acquire the Generator Assets and to pay $D + E + IE + COP - GOP - LA$ therefor.	None.

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	<b>Termination Payment to be made by EGAT</b>	<b>Termination Payment to be made by Generator</b>
A.5 Termination after the Commercial Operation Date due to Generator Event of Default	None when EGAT does not elect to acquire the Generator Assets.	If EGAT elects not to acquire the Generator Assets, then Generator is obliged to pay $TLC*(1-Y/29) + AC + CF + (CV*RC) - RV$ .
	If EGAT elects to acquire the Generator Assets, then EGAT is obliged to pay D upon its acquisition of the Generator Assets.	If EGAT elects to acquire the Generator Assets, then Generator shall not make a Termination Payment.
A.6 Termination after the Commercial Operation Date due to EGAT Event of Default	EGAT is obliged to acquire the Generator Assets and to pay $D + E*(1-Y/29) + LER + COP - GOP - LA$ therefor.	None.
<b>B. Force Majeure Termination before Financial Close Date</b>		
B.1 All Force Majeure termination other than due to Lao Political Force Majeure - either EGAT or Generator terminates	None and EGAT returns the full amount of the Development Security then in effect to Generator.	None.
B.2 Lao Political Force Majeure - either EGAT or Generator terminates	None.	EGAT retains full amount of the Development Security. No additional compensation.
<b>C. Force Majeure Termination after Financial Close Date but prior to the Commercial Operation Date</b>		
C.1 Generator Force Majeure - Generator terminates	None.	None.
C.2 Generator Force Majeure - EGAT terminates	None.	None.
C.3 EGAT Force Majeure - EGAT terminates	None.	None.

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	<b>Termination Payment to be made by EGAT</b>	<b>Termination Payment to be made by Generator</b>
C.4 EGAT Force Majeure – Generator terminates	None	None.
C.5 EGAT Force Majeure affecting Acquisition of Access Rights - Generator terminates	EGAT is obliged to acquire the Generator Assets and to pay $D + E + IE + COP - GOP - LA$ therefor.	None.
C.6 EGAT Force Majeure affecting Acquisition of Access Rights - EGAT terminates	EGAT is obliged to acquire the Generator Assets and to pay $D + E + IE + COP - GOP - LA$ therefor.	None.
C.7 Lao Political Force Majeure – Generator terminates	None when EGAT does not elect to acquire the Generator Assets.	If EGAT elects not to acquire the Generator Assets, then Generator is obliged to pay $TLC + AC + CF + [CC * CV * (90-M)/90] - RV$ .
	If EGAT elects to acquire the Generator Assets, then EGAT pays D upon its acquisition of the Generator Assets.	If EGAT elects to acquire the Generator Assets, then Generator shall not make a Termination Payment.
C.8 Lao Political Force Majeure – EGAT terminates	None when EGAT does not elect to acquire the Generator Assets.	If EGAT elects not to acquire the Generator Assets, then Generator is obliged to pay $TLC + AC + CF + [CC * CV * (90-M)/90] - RV$ .
	If EGAT elects to acquire the Generator Assets, then EGAT pays D upon its acquisition of the Generator Assets.	If EGAT elects to acquire the Generator Assets, then Generator shall not make Termination Payment.

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	<b>Termination Payment to be made by EGAT</b>	<b>Termination Payment to be made by Generator</b>
C.9 Thai Political Force Majeure - Generator terminates	EGAT is obliged to acquire the Generator Assets and to pay D + E + IE + COP - GOP - LA therefor.	None.
C.10 Thai Political Force Majeure - EGAT terminates	EGAT is obliged to acquire the Generator Assets and to pay D + E + IE + COP - GOP - LA therefor.	None.
<b>D. Force Majeure Termination after the Commercial Operation Date</b>		
D.1 Generator Force Majeure - Generator terminates	None..	None.
D.2 Generator Force Majeure – EGAT terminates	None.	None.
D.3 EGAT Force Majeure - EGAT terminates	None.	None.
D.4 EGAT Force Majeure – Generator terminates	None.	None.
D.5 Lao Political Force Majeure – Generator terminates	None when EGAT does not elect to acquire the Generator Assets.	If EGAT elects not to acquire the Generator Assets, then Generator is obliged to pay $TLC*(1 - Y/29) + AC + CF + (CV* RC) - RV$ .
	If EGAT elects to acquire the Generator Assets, then EGAT pays D upon its acquisition of the Generator Assets.	If EGAT elects to acquire the Generator Assets, then Generator shall not make a Termination Payment.

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	<b>Termination Payment to be made by EGAT</b>	<b>Termination Payment to be made by Generator</b>
D.6 Lao Political Force Majeure – EGAT terminates	None when EGAT does not elect to acquire the Generator Assets.	If EGAT elects not to acquire the Generator Assets, then Generator is obliged to pay $TLC^* (1 - Y/29) + AC + CF + (CV^* RC) - RV$ .
	If EGAT elects to acquire the Generator Assets, then EGAT pays D upon its acquisition of the Generator Assets.	If EGAT elects to acquire the Generator Assets, then Generator shall not make a Termination Payment.
D.7 Thai Political Force Majeure – Generator terminates	EGAT is obliged to acquire the Generator Assets and to pay $D + E^*(1 - Y/29) + LER + COP - GOP - LA$ therefor.	None.
D.8 Thai Political Force Majeure - EGAT terminates	EGAT is obliged to acquire the Generator Assets and to pay $D + E^*(1 - Y/29) + LER + COP - GOP - LA$ therefor.	None.

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<b>List of symbols used in the above table</b>	
AC	Administration Costs
COP	Counterparty Outstanding Payments
D	Debt
GOP	Generator Outstanding Payments
LC	Lost Capacity Payment
RC	Registered Capacity
Y	In respect of a termination that occurs after the Commercial Operation Date, (i) for any termination after the Commercial Operation Date, the number of full calendar years from the Commercial Operation Date until the Term Termination Date; or (ii) for any termination prior to the Commercial Operation Date, zero (0).
CC	Contracted Capacity
E	Paid Equity Contribution
LER	Lost Equity Return
RV	Residual Value
LA	Liquid Assets
CF	Consultants' Fees
IE	Interest on Paid Equity Contribution
M	In respect of a termination that occurs prior to the Commercial Operation Date, (i) for termination that occurs before the Scheduled Commercial Operation Date, the number of Full Calendar Months from the Term Termination Date until the Scheduled Commercial Operation Date; or (ii) for termination that occurs on or after the Scheduled Commercial Operation Date, zero (0)
TLC	EGAT Transmission Facilities Cost

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**Part III: Termination Payment Calculation and Process**

- 1 Subject to Section 7.3(a), the Termination Payment payable by either Party as determined in accordance with Part II of this Schedule 9 shall be paid upon written demand in the currency owing to a bank account nominated by the payee Party (or, in the event that the Lenders have taken any enforcement action under the Financing Documents in accordance with the terms and conditions applicable to such enforcement action set forth in the consent to the assignment of the Agreement to the Lenders issued by EGAT pursuant to Section 17.4.3(a)(i) of the Agreement, to a bank account nominated by the Security Nominee).
- 2 The amount of the Termination Payment shall be calculated as of the date that is the earlier to occur of: (i) the date of payment of the Termination Payment; and (ii) the Scheduled Termination Payment Date, which shall include (if required for the calculation of the Termination Payment) the amount of the Paid Equity Contribution, if any, and Debt as determined on the Term Termination Date, with the amount of any Termination Payment that includes the payment of Debt to also include payment of interest on such Debt calculated at the interest rate applicable under the Financing Documents for the period from (and including) the Term Termination Date until (but excluding) the date which is the earlier to occur of: (i) the date on which the Termination Payment is made to Generator; and (ii) the Scheduled Termination Payment Date; provided that in all cases when the Party required to make a Termination Payment fails to make such Termination Payment to the other Party by the Scheduled Termination Payment Date therefor in a situation where the obligation of that Party to make that payment has not otherwise been excused in accordance with Section 17.12.2(b), then the Party that failed to make such payment by the Scheduled Termination Payment Date shall pay interest to the other Party on the amount of the Termination Payment due on the Scheduled Termination Payment Date at the Default Rate in accordance with the requirements of Section 7.5 commencing on and including the Scheduled Termination Payment Date, as such date may have been extended pursuant to Paragraph 3 of Part III of this Schedule 9, and continuing until (but excluding) the date on which payment of such Termination Payment is received by the other Party and, notwithstanding any other provision in this Agreement to the contrary but without prejudice to its continued right to receive the Termination Payment in respect of which it accrues, such interest at the Default Rate shall be the sole and exclusive remedy of the Party to whom such Termination Payment is payable for the non-payment of such Termination Payment during such period between the Scheduled Termination Payment Date, as such date may have been extended pursuant to Paragraph 3 of Part III of this Schedule 9, and the date on which payment of such Termination Payment is received by the other Party.
- 3 The Party to whom the Termination Payment is to be made shall prepare and deliver the invoice for such Termination Payment to the Party liable therefor in accordance with the requirements set forth in Paragraphs 3 and 4 of Part III of this Schedule 9. The Party to whom the Termination Payment is to be made shall issue the invoice therefor no later than:
  - (a) if the Agreement is terminated after the Financial Close Date due to a Generator Event of Default or a Lao Political Force Majeure pursuant to

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Sections 10.2.2, 11.11(c)(ii) or 11.11(d)(i), forty five (45) days after the date on which EGAT elects either to acquire the Generator Assets or to obtain the Termination Payment from Generator pursuant to Sections 10.2.3 or 11.8.5; or

- (b) if the Agreement is terminated after the Financial Close Date due to an EGAT Event of Default, a failure of EGAT to obtain the EGAT Access Rights due to an EGAT Access Rights Force Majeure referred to in Section 2.1.7(c) or a Thai Political Force Majeure pursuant to Sections 10.1.2, 11.11(b), 11.11(c)(i) or 11.11(d)(i), forty five (45) days after the Term Termination Date;

and, if the Party owed the Termination Payment fails to deliver to the Party liable therefor the invoice for the Termination Payment with such certifications as are required by Paragraph 4 of Part III of this Schedule 9 attached thereto within the forgoing forty five (45) day period, the Scheduled Termination Payment Date for making such Termination Payment shall be extended day for day for each day that the delivery of such invoice is delayed beyond the expiration of the foregoing forty five (45) day period and, provided further, that any disputes regarding the substance of an invoice for a Termination Payment and any deficiencies therein (other than failure to attach any certifications required to be attached thereto by Paragraph 4 of Part III of this Schedule 9) are not relevant to the question as to whether or not such invoice has been delivered to the Party liable for such Termination Payment and shall not serve as the basis for any extensions to the Scheduled Termination Payment Date.

In the event that the Party liable for the Termination Payment intends to make such payment prior to the Scheduled Termination Payment Date, it shall give the Party owed such payment written notice of its intended date of payment at least twenty (20) days prior to such intended date of payment. Upon receipt of such notice, the Party owed the Termination Payment shall either include in its first issued invoice or reissue any previously issued invoice with the amount of the Termination Payment calculated as for such earlier date for payment.

For the avoidance of doubt, Section 7.1.5 shall apply for establishing the date of delivery and receipt of any such invoice for a Termination Payment issued hereunder.

- 4 An invoice for a Termination Payment shall set forth in reasonable detail the calculation of the amount of the Termination Payment and shall have attached thereto the following certifications:
- (a) in the event that EGAT either elects to exercise its rights to acquire the Generator Assets or is otherwise obligated to so acquire the Generator Assets, Generator shall attach a certification by or on behalf of the Lenders or the Security Nominee as to the amount of Debt by reference to the components of Debt referenced in items (a), (b), (c), (d) and (e) of the definition thereof set forth in Section 1.1; and
- (b) in the event that EGAT elects not to exercise its rights to acquire the Generator Assets and instead elects to obtain the Termination Payment from Generator, EGAT shall attach the certification of the Valuer as to the Residual Value as of the Term Termination Date.

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- 5 Upon the Term Termination Date for termination of the Agreement due to a Generator Event of Default or the occurrence of a Lao Political Force Majeure pursuant to Sections 10.2.3 or 11.8.5 and for which EGAT elects not to exercise its rights to acquire the Generator Assets and instead elects to obtain the Termination Payment from Generator, a Valuer shall be appointed to determine and certify the correct value for the Residual Value. If the Parties are unable to appoint the Valuer within fifteen (15) days of the Term Termination Date, the President of the Royal Institute of Chartered Surveyors shall appoint the Valuer upon the written request of either Party. Each Party shall promptly supply at the request of the Valuer all such documents and information as may be reasonably required for the purpose of the valuation. The Valuer shall issue its certification of the Residual Value as of the Term Termination Date within sixty (60) days of its appointment and shall issue to each Party a copy of the certificate of such valuation within three (3) Business Days of completing its valuation. The certificate of the Valuer as to the value of the Residual Value shall (in the absence of manifest error) be final and conclusive on the part of both Parties and shall not be the subject of appeal by way of legal proceedings or arbitration.
- 6 Subject to Section 17.9(b) and save for any additions for Counterparty Outstanding Payments and deductions for Generator Outstanding Payments made to the extent permitted in Part II of this Schedule 9, the Termination Payment determined under this Schedule 9 shall be calculated without taking into account any set off or counterclaim and shall be made free and clear of and without deduction for or on account of any set off or counterclaim.

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**Schedule 10****CALCULATION IN RESPECT OF FORCE MAJEURE OFFSET AMOUNT****1 Force Majeure Offset Amounts determined on the basis of Monthly Force Majeure Unavailability**

For the purpose of calculating the Force Majeure Offset Amounts payable by either Party pursuant to a Generator Affected Force Majeure Outage in accordance with Sections 11.7.4 or 11.8.4, as applicable, the Monthly Force Majeure Unavailability shall be determined based on the following assumptions:

- (1) the relevant Monthly Force Majeure Unavailability shall be associated with:
  - (i) the generating capacity of each such relevant Generating Unit as a whole rather than a portion of their respective generating capacity (i.e. the entire Generating Unit rather than a portion thereof shall be affected); and
  - (ii) the total duration of each day during which such relevant Generating Unit is affected (i.e. the entire day rather than a portion thereof shall be affected);
- (2) the implication of water availability and the possible adjustment of the relevant Declaration by Generator in respect thereof shall not be taken into account; and
- (3) the effect of any Generator Planned Outage or Generator Maintenance Outage in respect of such Generator Affected FM Month shall not be taken into account for the purpose of determining the Monthly Force Majeure Unavailability, regardless of whether or not the relevant Generator Affected Force Majeure Outage is known to Generator at the time of making Weekly Declaration.

(a) Monthly Force Majeure Unavailability in respect of a given Generator Affected FM Month

(1) Daily Per Unit Supply Target

For the purpose of determining Monthly Force Majeure Unavailability in respect of a given Generator Affected FM Month, the "Daily Per Unit Supply Target" in respect of each Committed Energy Component shall be defined as follows:

Let: AnPESupTar be the Annual PE Supply Target for a full calendar year as defined in Section 4.4.1(b)(i);

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AnSESupTar be the Annual SE Supply Target for a full calendar year as defined in Section 4.4.1(b)(i);

DaiPUPESupTar be the Daily Per Unit PE Supply Target; and

DaiPUSESupTar be the Daily Per Unit SE Supply Target;

$$\begin{aligned} \text{Then: DaiPUPESupTar} &= \text{AnPESupTar} / (7 \times 365) \\ &= 1.6826 \text{ GWh/Unit/day} \end{aligned}$$

$$\begin{aligned} \text{DaiPUSESupTar} &= \text{AnSESupTar} / (7 \times 365) \\ &= 0.5519 \text{ GWh/Unit/day} \end{aligned}$$

The Daily Per Unit PE Supply Target and the Daily Per Unit SE Target as calculated above shall apply starting from the Commercial Operation Date.

(2) Determination of Committed Energy Components comprised in the Monthly Force Majeure Unavailability

Let: MoFMPEUnavail be the Monthly Force Majeure Unavailability in respect of Primary Energy for such given Generator Affected FM Month;

MoFMSEUnavail be the Monthly Force Majeure Unavailability in respect of Primary Energy for such given Generator Affected FM Month;

WePEAvail<sub>i</sub> be the Weekly PE Availability for a given week *i* for which part or all thereof is comprised in such given Generator Affected FM Month;

WeSEAvail<sub>i</sub> be the Weekly SE Availability for a given week *i* for which part or all thereof is comprised in such given Generator Affected FM Month;

MoPEAvail be the Monthly PE Availability for such given Generator Affected FM Month, determined or estimated on the basis of all WePEAvail<sub>i</sub>;

MoSEAvail be the Monthly SE Availability for such given Generator Affected FM Month, determined or estimated on the basis of all WeSEAvail<sub>i</sub>;

DaiPUPESupTar and DaiPUSESupTar be the value defined in Paragraph 1(a)(1) of Schedule 10;

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NoFMGen be the number of Generating Units that are associated with the relevant Generator Affected Force Majeure Outage; and

NoFMDay<sub>N</sub> be the number of days in such given month for which Generating Unit N is associated with the relevant Generator Affected Force Majeure Outage;

$$\text{Then: MoFMPEUnavail} = \text{Min} [(DaiPUPESupTar \times \sum \text{NoFMDay}_N), \text{MoPEAvail}]$$

$$\text{MoFMSEUnavail} = \text{Min} [(DaiPUSESUpTar \times \sum \text{NoFMDay}_N), \text{MoSEAvail}]$$

Where both summations are taken for all N from 1 to NoFMGen.

In respect of such Generator Affected FM Month that does not comprise a Generator Excused FMOA Period referred to in Section 11.8.4(b)(2), the Force Majeure Offset Amounts in respect of each Committed Energy Component and the respective Generator FM Month that is payable by either Party shall be calculated in accordance with Sections 11.7.4 or 11.8.4, as applicable, on the basis of MoFMPEUnavail and MoFMSEUnavail, respectively.

(b) Determination of the Generator Excused FMOA Period

In connection with Section 11.8.4(b)(2), in respect of the relevant Generator Force Majeure that occurs:

Let: GFMSusPer<sub>1</sub> be the number of days in the first relevant Generator Affected FM Month that is associated with such Generator Force Majeure;

GFMSusPer<sub>2</sub> be the number of days in the second relevant Generator Affected FM Month that is associated with such Generator Force Majeure;

GExFMOAPer<sub>1</sub> be the number of days in the first relevant Generator Affected FM Month that is associated with the relevant Generator Excused FMOA Period;

GExFMOAPer<sub>2</sub> be the number of days in the second relevant Generator Affected FM Month that is associated with the relevant Generator Excused FMOA Period; and

R<sub>n</sub>GExFMOAAcc be the balance of the corresponding Relevant Period n Generator Excused FMOA Period Account prior to the occurrence of such Generator Force Majeure, where n = 2, 3, 4, 5 or 6, as applicable;

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$$\begin{aligned} \text{Then: } G_{\text{ExFMOA}}\text{Per}_1 & \\ &= \text{Min} \{ \text{Max} [(90 - R_n G_{\text{ExFMOA}}\text{Acc}), 0], G_{\text{FMSus}}\text{Per}_1, 14 \} \end{aligned}$$

$$\begin{aligned} G_{\text{ExFMOA}}\text{Per}_2 & \\ &= \text{Min} \{ \text{Max} [(90 - R_n G_{\text{ExFMOA}}\text{Acc} - G_{\text{ExFMOA}}\text{Per}_1), 0], \\ & \quad G_{\text{FMSus}}\text{Per}_2, (14 - G_{\text{ExFMOA}}\text{Per}_1) \} \end{aligned}$$

The Relevant Period n Generator Excused FMOA Period Account shall then be incremented by the sum of  $G_{\text{ExFMOA}}\text{Per}_1$  and  $G_{\text{ExFMOA}}\text{Per}_2$ .

(c) Determination of Force Majeure Offset Amounts in respect of the Generator Affected FM Month comprising the Generator Excused FMOA Period

In respect of a given Generator Affected FM Month that comprises a Generator Excused FMOA Period, the Monthly Force Majeure Unavailability in respect of each Committed Energy Component and the respective Generator FM Month i (i = 1 or 2) that is associated with the relevant Generator Excused FMOA Period shall be determined as follows:

Let:  $G_{\text{FMSus}}\text{Per}_i$  be the number of days in the Generator Affected FM Month i that is associated with such Generator Force Majeure;

$G_{\text{ExFMOA}}\text{Per}_i$  be the number of days in the Generator Affected FM Month i that is associated with the relevant Generator Excused FMOA Period determined in accordance with Paragraph 1(b) of Schedule 10;

$\text{MoFMPEUnavail}_i$  be the Monthly Force Majeure Unavailability in respect of Primary Energy for the Generator FM Month i determined in accordance with Paragraph 1(a)(2) of Schedule 10;

$\text{MoFMSEUnavail}_i$  be the Monthly Force Majeure Unavailability in respect of Secondary Energy for the Generator FM Month i determined in accordance with Paragraph 1(a)(2) of Schedule 10;

$\text{MoGExFMOAPE}_i$  be the Monthly Force Majeure Unavailability in respect of Primary Energy for the Generator FM Month i that is associated with the relevant Generator Excused FMOA Period;

$\text{MoGExFMOASE}_i$  be the Monthly Force Majeure Unavailability in respect of Secondary Energy for the Generator FM Month i that is associated with the relevant Generator Excused FMOA Period; and

i be the integer 1 or 2 which characterizes the first or the second Generator Affected FM Month, as applicable;

$$\text{Then: } \text{MoGExFMOAPE}_i = \text{MoFMPEUnavail}_i \times (G_{\text{ExFMOA}}\text{Per}_i / G_{\text{FMSus}}\text{Per}_i)$$

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$$\text{MoGExFMOASE}_i = \text{MoFMSEUnavail}_i \times (\text{GExFMOAPE}_i / \text{GFMSusPer}_i)$$

In respect of such Generator Affected FM Month that comprises a Generator Excused FMOA Period referred to in Section 11.8.4(b)(2), the Force Majeure Offset Amounts in respect of each Committed Energy Component and the respective Generator FM Month  $i$  ( $i = 1$  or  $2$ ) that is payable by Generator shall be calculated as follows:

- (i) for the first Generator Affected FM Month, on the basis of  $(\text{MoFMPEUnavail}_1 - \text{MoGExFMOAPE}_1)$  and  $(\text{MoFMSEUnavail}_1 - \text{MoGExFMOASE}_1)$ , respectively; and
- (ii) for the second Generator Affected FM Month, on the basis of  $(\text{MoFMPEUnavail}_2 - \text{MoGExFMOAPE}_2)$  and  $(\text{MoFMSEUnavail}_2 - \text{MoGExFMOASE}_2)$ , respectively.

2. **Force Majeure Offset Amounts determined on the basis of Monthly Force Majeure Dispatch Shortfall Energy**

(a) **Determination of Weekly Force Majeure Dispatch Shortfall Energy**

**(A) For the week that is not an EGAT Affected FM Week**

Let:  $\text{WeFMDSEn}_w$  be the Weekly Force Majeure Dispatch Shortfall Energy for the relevant week  $w$ ;

Then:  $\text{WeFMDSEn}_w = 0$

**(B) For the week that is an EGAT Affected FM Week**

Let:  $\text{WeFMDSEn}_w$  be the Weekly Force Majeure Dispatch Shortfall Energy for the relevant week  $w$ ;

$\text{FinPEAvail}_w$  be the Final PE Availability for a given week  $w$  comprised in Contract Year  $j$ , as determined in Paragraph 3.3 of Part II of Schedule 3;

$\text{FinSEAvail}_w$  be the Final SE Availability for a given week  $w$  comprised in Contract Year  $j$ , as determined in Paragraph 3.3 of Part II of Schedule 3; and

$\text{WeNetEn}_w$  be the Net Electrical Energy at the Delivery Point for the relevant week  $w$  determined in Paragraph 3 of Part II of Schedule 7;

Then:  $\text{WeFMDSEn}_w = \text{Max} \{[(\text{FinPEAvail}_w + \text{FinSEAvail}_w) - \text{WeNetEn}_w], 0\}$

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The occurrence of Monthly Force Majeure Dispatch Shortfall Energy shall not affect the balance of:

- (i) the Dispatch Shortfall Energy Account; and
  - (ii) the Dispatch Shortfall Payment Account.
- (b) Determination of Committed Energy Components comprised in the Weekly Force Majeure Dispatch Shortfall Energy

The Committed Energy Components comprised in the Weekly Force Majeure Dispatch Shortfall Energy shall be determined by applying the respective Weekly Declared EC Percentage provided in Paragraph 5A of Part II of Schedule 3 to the Weekly Force Majeure Dispatch Shortfall Energy.

**(A) For the week that is not an EGAT Affected FM Week**

Let:  $WeFMDSPe_w$  be the Primary Energy comprised in the Weekly Force Majeure Dispatch Shortfall Energy for the relevant week  $w$ ; and

$WeFMDSSe_w$  be the Secondary Energy comprised in the Weekly Force Majeure Dispatch Shortfall Energy for the relevant week  $w$ ;

$$\text{Then: } WeFMDSPe_w = 0$$

$$WeFMDSSe_w = 0$$

**(B) For the week that is an EGAT Affected FM Week**

Let:  $WeFMDSEn_w$  be the Weekly Force Majeure Dispatch Shortfall Energy for the relevant week  $w$  determined in Paragraph 2(a)(B) of this Schedule 10;

$WeDecPEPer_w$  and  $WeDecSEPer_w$  be the Weekly Declared PE Percentage and the Weekly Declared SE Percentage determined in accordance with Paragraph 5A of Part II of Schedule 3;

$MoFMDSPe_m$  be the Primary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the relevant month  $m$  determined or estimated on the basis of all  $WeFMDSPe_w$  for a given week for which part or all thereof is comprised in such given Generator Affected FM Month; and

$MoFMDSSe_m$  be the Secondary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the relevant month  $m$ ;

$$\text{Then: } WeFMDSPe_w = WeFMDSEn_w \times WeDecPEPer_w$$

$$WeFMDSSe_w = WeFMDSEn_w \times WeDecSEPer_w$$

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(c) Determination of Committed Energy Components comprised in the Monthly Force Majeure Dispatch Shortfall Energy

The Primary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the relevant month  $m$  shall be determined or estimated on the basis of all  $WeFMDSPE_w$  determined in accordance with Paragraph 2(b)(B) of this Schedule 10, for all relevant weeks for which part or all thereof is comprised in such given EGAT Affected FM Month, and the Secondary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the relevant month  $m$  shall be determined or estimated on the basis of all  $WeFMDSSE_w$  determined in accordance with Paragraph 2(b)(B) of this Schedule 10, for all relevant weeks for which part or all thereof is comprised in such given EGAT Affected FM Month

The Committed Energy Components comprised in the Monthly Force Majeure Dispatch Shortfall Energy determined herein shall be used for the calculation of:

- (1) the Weekly Supply in respect of each Committed Energy Component for the respective EGAT Affected FM Month in accordance with Paragraph 1(a) of Schedule 4; and
- (2) in respect of such EGAT Affected FM Month that does not comprise an EGAT Excused FMOA Period referred to in Section 11.7.4(b)(2), the Force Majeure Offset Amounts in respect of each Committed Energy Component and the respective EGAT FM Month that is payable by either Party in accordance with Sections 11.7.4 and 11.8.4.

(d) Determination of Force Majeure Offset Amounts in respect of the EGAT Affected FM Month comprising the EGAT Excused FMOA Period

In connection with Section 11.7.4(b)(2), in respect of the relevant EGAT Force Majeure that occurs:

Let:  $EFMSusPer_1$  be the number of days in the first relevant EGAT Affected FM Month that is associated with such EGAT Force Majeure;

$EFMSusPer_2$  be the number of days in the second relevant EGAT Affected FM Month that is associated with such EGAT Force Majeure;

$EExFMOAPer_1$  be the number of days in the first relevant EGAT Affected FM Month that is associated with the relevant EGAT Excused FMOA Period;

$EExFMOAPer_2$  be the number of days in the second relevant EGAT Affected FM Month that is associated with the relevant EGAT Excused FMOA Period;

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MoFMDSPE<sub>1</sub> be the Primary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the first relevant EGAT Affected FM Month determined in accordance with Paragraph 2(c) of Schedule 10;

MoFMDSSE<sub>1</sub> be the Secondary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the first relevant EGAT Affected FM Month determined in accordance with Paragraph 2(c) of Schedule 10;

MoFMDSPE<sub>2</sub> be the Primary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the second relevant EGAT Affected FM Month determined in accordance with Paragraph 2(c) of Schedule 10;

MoFMDSSE<sub>2</sub> be the Secondary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the second relevant EGAT Affected FM Month determined in accordance with Paragraph 2(c) of Schedule 10;

MoEExFMOAPE<sub>1</sub> be the Primary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the first relevant EGAT Affected FM Month that is associated with the relevant EGAT Excused FMOA Period;

MoEExFMOASE<sub>1</sub> be the Secondary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the first relevant EGAT Affected FM Month that is associated with the relevant EGAT Excused FMOA Period;

MoEExFMOAPE<sub>2</sub> be the Primary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the second relevant EGAT Affected FM Month that is associated with the relevant EGAT Excused FMOA Period;

MoEExFMOASE<sub>2</sub> be the Secondary Energy comprised in the Monthly Force Majeure Dispatch Shortfall Energy for the second relevant EGAT Affected FM Month that is associated with the relevant EGAT Excused FMOA Period; and

R<sub>n</sub>EExFMOAAcc be the balance of the corresponding Relevant Period n EGAT Excused FMOA Period Account prior to the occurrence of such EGAT Force Majeure, where n = 2, 3, 4, 5 or 6, as applicable;

Then: EExFMOAPer<sub>1</sub>  
= Min {Max [(90 – R<sub>n</sub>EExFMOAAcc), 0], EFMSusPer<sub>1</sub>, 14}

EExFMOAPer<sub>2</sub>

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$$= \text{Min} \{ \text{Max} [(90 - R_n \text{EExFMOA} \text{Acc} - \text{EExFMOA} \text{Per}_1), 0], \text{EFMSusPer}_2, (14 - \text{EExFMOA} \text{Per}_1) \}$$

$$\text{MoEExFMOAPE}_1 = \text{MoFMDSPe}_1 \times (\text{EExFMOA} \text{Per}_1 / \text{EFMSusPer}_1)$$

$$\text{MoEExFMOASE}_1 = \text{MoFMDSSe}_1 \times (\text{EExFMOA} \text{Per}_1 / \text{EFMSusPer}_1)$$

$$\text{MoEExFMOAPE}_2 = \text{MoFMDSPe}_2 \times (\text{EExFMOA} \text{Per}_2 / \text{EFMSusPer}_2)$$

$$\text{MoEExFMOASE}_2 = \text{MoFMDSSe}_2 \times (\text{EExFMOA} \text{Per}_2 / \text{EFMSusPer}_2)$$

The Relevant Period n EGAT Excused FMOA Period Account shall then be incremented by the sum of ExEFMOA<sub>Per1</sub> and ExEFMOA<sub>Per2</sub>.

In respect of such EGAT Affected FM Month that comprises an EGAT Excused FMOA Period referred to in Section 11.7.4(b)(2), the Force Majeure Offset Amounts in respect of each Committed Energy Component and the respective EGAT FM Month i (i = 1 or 2) that is payable by EGAT shall be calculated as follows:

- (i) for the first EGAT Affected FM Month, on the basis of (MoFMDSPe<sub>1</sub> - MoEExFMOAPE<sub>1</sub>) and (MoFMDSSe<sub>1</sub> - MoEExFMOASE<sub>1</sub>), respectively; and
- (ii) for the second EGAT Affected FM Month, on the basis of (MoFMDSPe<sub>2</sub> - MoEExFMOAPE<sub>2</sub>) and (MoFMDSSe<sub>2</sub> - MoEExFMOASE<sub>2</sub>), respectively.

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**Schedule 11****THE GENERATOR SYSTEM****Part I: General Description of the Project**

Schedule 11 sets out the major elements and the main features of the Generator System, which shall be the basis for its design, construction and operation. The information set out in this Schedule 11 shall be made consistent with the Final Concept Design to be submitted to EGAT according to Section 2.3.1(b).

For the avoidance of doubt,

- (i) the Final Concept Design and any adjustment thereof after its submittal to EGAT shall not result in any change of the Generator System that adversely affects the Generator's capability to satisfy its obligations in this Agreement;
- (ii) the relevant part of the Final Concept Design shall be consistent with the relevant requirements, information and data contained in Part II of Schedule 11 and Part III of Schedule 1, which shall be binding on the Generator; and
- (iii) Part I of this Schedule 11 may be adjusted by the Generator from time to time after the submittal of the Final Concept Design as required by the progress of the construction of the Generator System, and Generator shall inform EGAT and provide supporting documents for each such adjustment.

**1 Project Overview**

The Xayaburi Hydroelectric Power Project is located on the mainstream, the Mekong River in the Lao territory. The Xayaburi barrage site is situated at KM.1930.7 from the Mekong River Mouth, between Luang Prabang in its upstream reach and the Pak Lay potential project site downstream. Access to the project site is about 200 km. from Thai border through the National Road No.4 at 15 km. north of Xayaburi town where the access road of about 18 km. passing through B.Talan to the project site is illustrated in figure 11.1

The general arrangement includes the navigation facilities, the spillway, the intermediate block, the powerhouse, and fish passing facilities. These components are located from the right to left abutment. Subject to Section 2.13, the electrical energy produced by the Facility will be transmitted at 500 kV voltage level to the Delivery Point for the EGAT System in accordance with this Agreement.

The general arrangement of the project layout is shown in Figure 11.2

The main features of all components of the Project are summarized in Paragraph 2 of Part I of Schedule 11. The power generation and transmission facilities of the Project are described in Paragraph 3 of Part I of Schedule 11. The control system of the Project is shown by the diagram in Paragraph 4 of Part I of Schedule 11.

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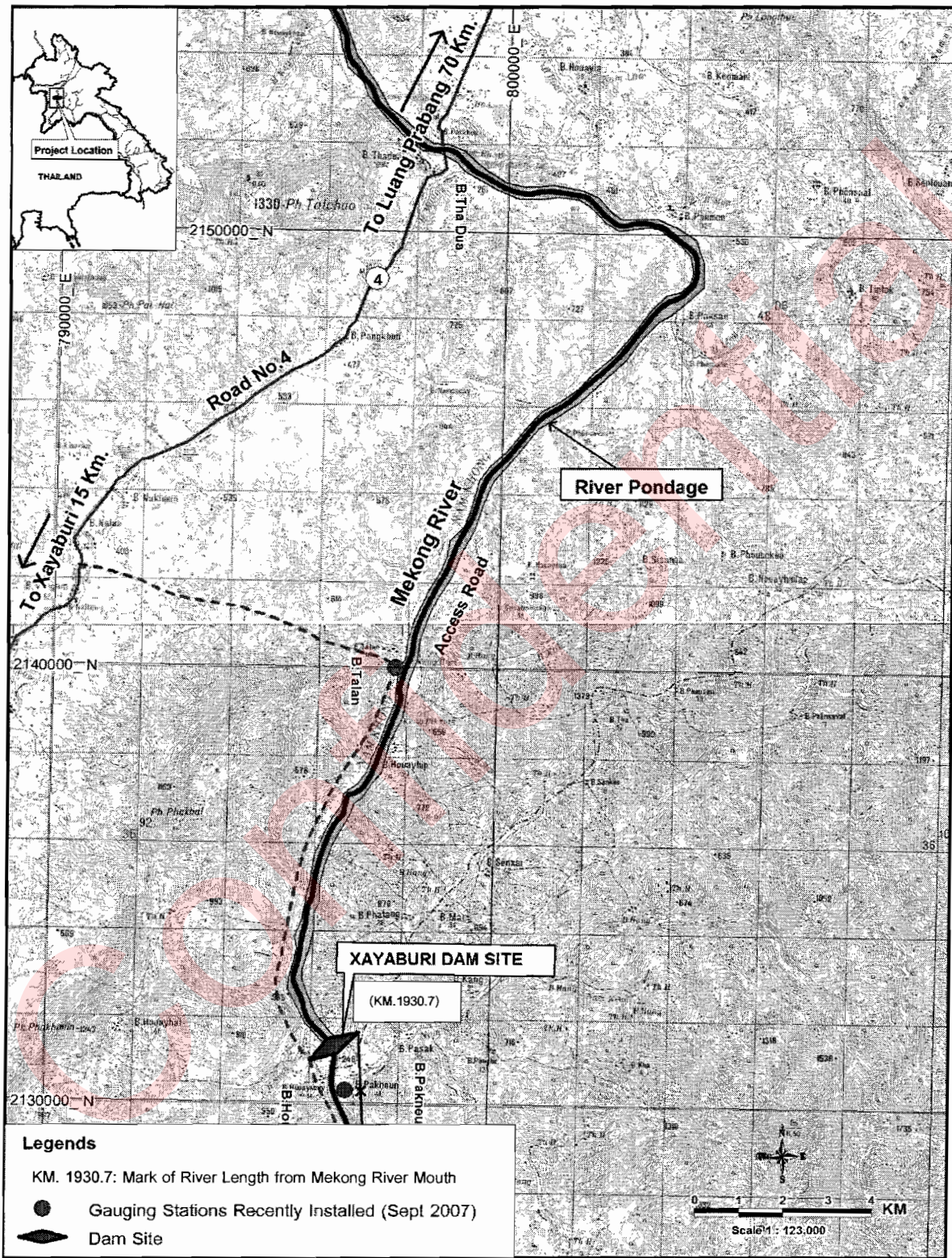
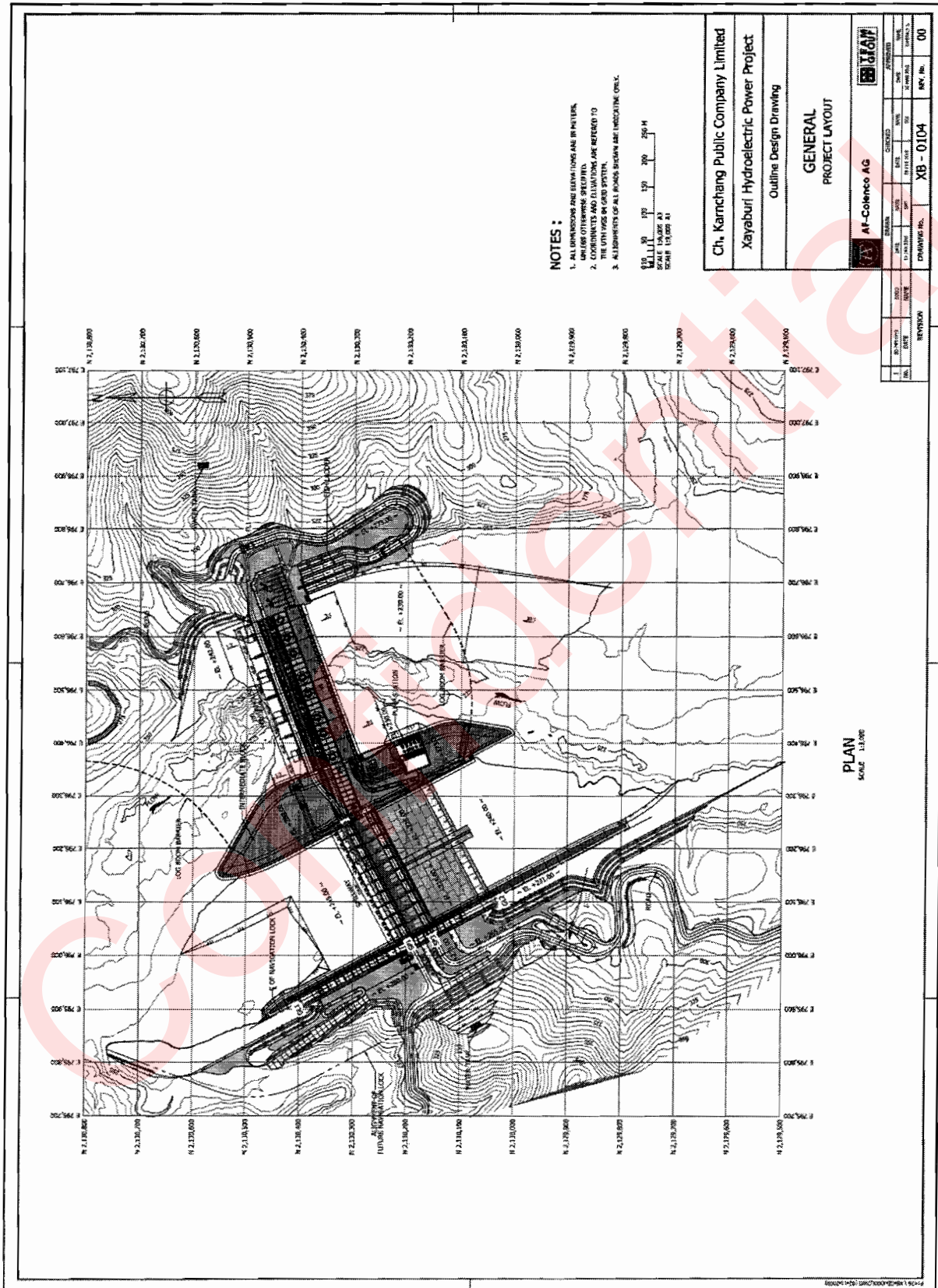


Figure 11.1 : Location of the Xayaburi Hydroelectric Power Project

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Figure 11.2: The General Project Layout

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## 2 Hydrology and Main Features of the Project

The Hydrology and main features of the project are summarized as follow:

### 2.1 Hydrological Data

Catchment Area	272,000	Km <sup>2</sup> .
Average Annual Inflow	3,971	MCM
PMF	47,500	m <sup>3</sup> /s

### 2.2 River Pondage

Area	49	Km <sup>2</sup> .
Length	80	Km.
High water level	275	m.asl
Low water level	274.5	m.asl
Maximum water level in flood condition	278.3	m.asl

### 2.3 Navigation System

Type : 2-step navigation locks, upstream and downstream approach channels for accommodating boats up to 500 tons

Head water level for navigation

- Maximum	275.00 m asl
- Minimum	265.90 m asl

Tailwater levels for navigation

- Maximum	260.00 m asl
- Minimum	236.00 m asl

Navigation lock length (both upper and lower lock) 300 m

Navigation lock width 12 m

Minimum water depth 4 m

### 2.4 Spillway

Type : Gate controlled overflow ogee crest with downstream stilling basin

Inflow flood peaks

- Q 1,000	37,100 m <sup>3</sup> /s
- Q 10,000	45,000 m <sup>3</sup> /s
- PMF	47,500 m <sup>3</sup> /s

Type of gates Radial

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Gate number and dimension	10 gates, 21.0 m x 19.0 (HxW)
Ogee crest elevation	254.00 m asl
Maximum head water level (PMF, all gates open)	278.30 m asl
Crest elevation of head eater retaining structures	280.00 m asl
Energy dissipater	Stilling basin

### 2.5 Fish Passing Facilities

Facilities for upstream migration:

- Fish collection gallery at powerhouse tailrace
- Auxiliary collection point at the spillway
- Fish ladder on the left abutment
- Pumping facilities for water supply in dry season
- Gravity water supply in wet season.

Facilities for downstream migration:

- Fish collection gallery at the power intakes
- Fish delivery channel and chute in the Spillway – powerhouse separating block.

### 2.6 Powerhouse

Type : Onground – Reinforce concrete structure

#### Turbine

- Type Vertical axis Kaplan
- Rated Turbine Output 175 MW
- Rated Turbine Discharge 665 m<sup>3</sup>/s

#### Generators

- Type 3-phase synchronous
- Number 7 unit
- Rated Capacity 200 MVA
- Power factor 0.85 lagging and 0.95 leading according to EGAT Grid Code
- Rated frequency 50 Hz
- Transient operation frequency range 49.5 – 50.5 Hz

#### Main transformers

- Type Three-phase, Two windings

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- Number 8 Set (1 for Spare)
- Rated Capacity 140/180/220 (OA/FA/FOA)

Switchgear

- Type GIS
- Location Indoor
- Nominal voltage 500 kV
- Bus arrangement Double bus – Single breaker

**2.7 Transmission Line**

500 kV 4x795 MCM Double Circuit form Xayaburi Switchyard to Thai-Lao border 200 km. (Approximate)

**3 Power generation and transmission facilities****3.1 Power Generation.**

The power generation of Xayaburi Hydroelectric Power Project is estimated on the basis of the daily river flow through the barrage. The project is considered a run-of-river type as the storage is very small compared to inflow. The average river flow of 3,955 m<sup>3</sup>/sec is obtained from a series of 46 years of daily flows assuming the presence of the upstream China (Xiaowan and Nuozhadu) Projects and the downstream Pak Lay Project. The river flow in the wet year and dry year are assumed to be 4,744 m<sup>3</sup>/s and 3,204 m<sup>3</sup>/s respectively.

The expected monthly energy generation (in GWh), obtained from the generation simulation, is tabulated in Table 11.1 (Expected Monthly Energy Table) for the above river flow assumption as in the table below. Such expected monthly energy generation shall not have any effects or implications on the Energy Availability that the Generator actually declares in each month

All seven units are normally operated during four months period (July to October). The monthly primary energy is therefore in the range of 200 to 500 GWh. In general the planning for energy generation will be prepared based on the expected river flow and corresponding tail water elevation.

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Table 11.1 Expected Monthly Energy Table

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
<b>Normal Year</b>													
PE	310	253	263	252	266	337	490	441	429	483	421	354	4,299
SE	92	72	72	69	73	103	183	164	159	180	135	108	1,410
EE	78	61	61	58	62	88	159	144	140	158	118	95	1,220
<b>Total</b>	<b>481</b>	<b>385</b>	<b>396</b>	<b>379</b>	<b>401</b>	<b>528</b>	<b>831</b>	<b>748</b>	<b>728</b>	<b>820</b>	<b>674</b>	<b>557</b>	<b>6,929</b>
<b>Wet Year</b>													
PE	328	261	268	253	280	383	456	416	404	465	468	378	4,357
SE	112	84	84	77	90	136	190	173	168	194	174	133	1,614
EE	86	65	64	59	69	106	151	136	133	154	136	103	1,261
<b>Total</b>	<b>526</b>	<b>409</b>	<b>415</b>	<b>389</b>	<b>440</b>	<b>625</b>	<b>797</b>	<b>725</b>	<b>704</b>	<b>813</b>	<b>777</b>	<b>613</b>	<b>7,233</b>
<b>Dry Year</b>													
PE	293	235	255	244	244	278	396	477	456	483	372	335	4,068
SE	95	70	75	71	70	87	139	197	188	177	128	102	1,400
EE	73	54	59	56	55	70	111	159	152	142	103	91	1,125
<b>Total</b>	<b>461</b>	<b>359</b>	<b>389</b>	<b>371</b>	<b>369</b>	<b>435</b>	<b>646</b>	<b>833</b>	<b>796</b>	<b>802</b>	<b>604</b>	<b>528</b>	<b>6,593</b>

### 3.2 Transmission Facilities

A 500 kV double circuit tower line arranged in three-phase vertical formation on each side of the tower will be used to transfer the power generated at Xayaburi power plant to the delivery point Thai/Laos border.

The total length of the line from Xayaburi power plant to the delivery point at Thai/Laos border is approximately 200 km. and from Thai/Laos border to Loei 2 Substation of EGAT is approximately 52 km.

The transmission line route starting from Xayaburi power plant to Loei 2 Substation as shown in the Figure 11.3.

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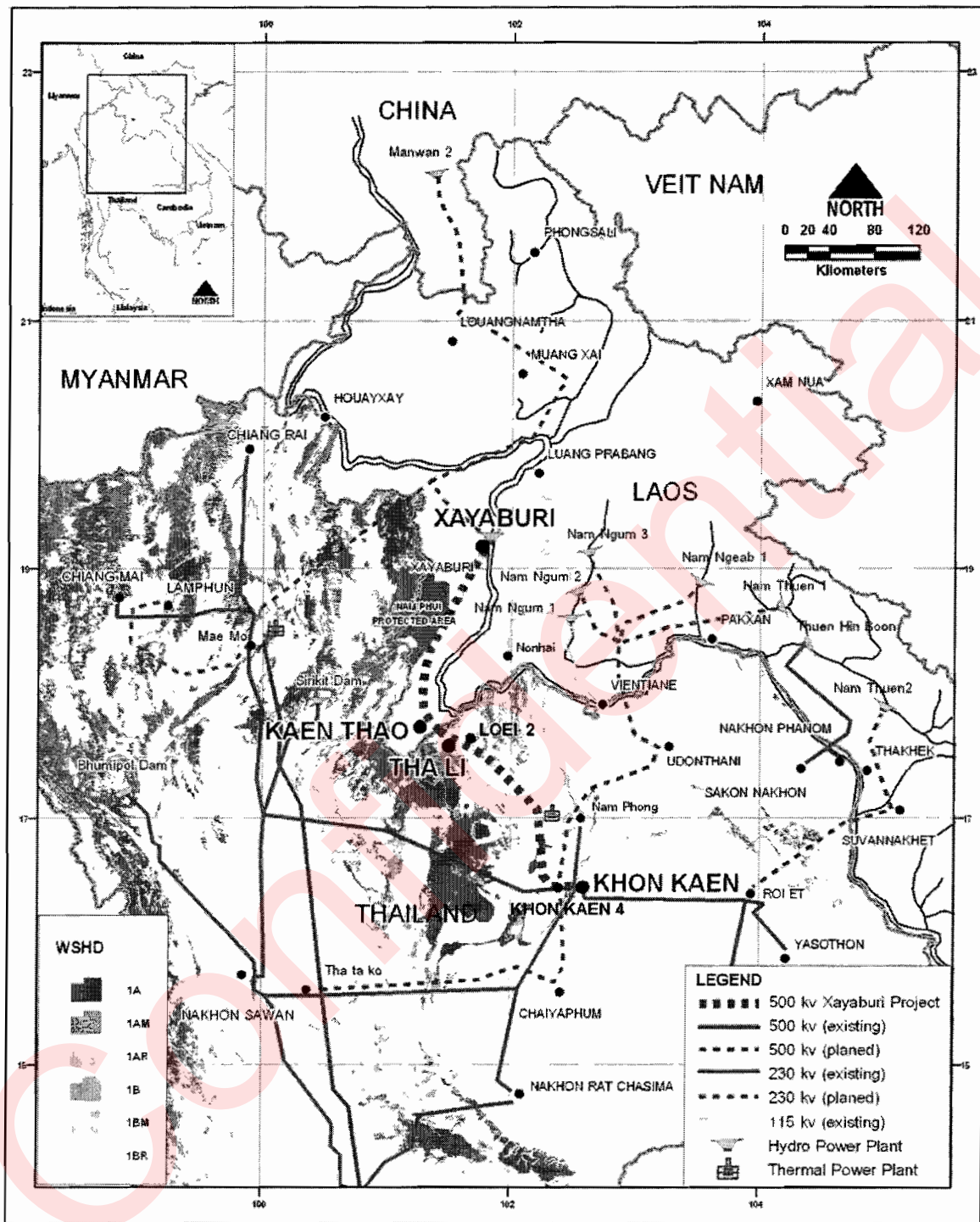


Figure 11.3 : 500 kV Transmission Route Xayaburi- Loei 2 Station

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#### 4 The Control System

The various main aspects of the power system of Xayaburi Hydroelectric Power Project are shown in Figures 11.4 to 11.6 attached to this Part I of Schedule 11, respectively.

##### Primary regulation

Each Generating Unit shall be equipped with a speed governor, which shall regulate its active power output through the governor droop. Such arrangement shall enable the Generating Unit to provide Unit Primary Response to the EGAT System as described in Paragraph 4 of Part III of this Schedule 1.

##### AGC

Each Generating Unit shall be equipped with Automatic Generation Control (AGC) system in order to receive and process the active power set points issued by NCC or BCC to the Generator System on a Unit by Unit basis for the purpose of Automatic Generation Control (AGC).

##### AGVC

Each Generating Unit shall be equipped with Automatic Generation Voltage Control (AGVC) system in order to receive and process the reactive power set points (MVar set points) or voltage control set points (kV set points) issued by NCC or BCC to the Generator System on a Unit by Unit basis for the purpose of Automatic Generation Voltage Control (AGVC).

##### Voltage regulation and power system stabilizer

Each Generating Unit is equipped with an automatic voltage regulator (AVR) associated with a power system stabilizer (PSS). EGAT shall be entitled to send voltage instructions in respect of the Xayaburi Switchyard 500 kV busbars to the Generator's operator through the voice communication system. The Generator shall maintain adequate number of spares of the relevant power system stabilizer at the Facility.

In the event that the power system stabilizer of a given Generating Unit fails to function, the Generator shall replace or repair the failed equipment expeditiously, but not more than seven(7) days of such failure, If the Generator does not repair or replace the failed equipment within seven(7) days, the Generator shall shutdown the generating unit that associated with such failed equipment

For avoidance of doubt, the Generator shall shutdown the generating unit when such power system stabilizer (PSS) failure causes any problems in the EGAT Systems, and Generating Unit shall not be permitted to operate until the failure equipment is replaced.

The type of the excitation system of each Generating Unit shall be a shunt static Excitation System.

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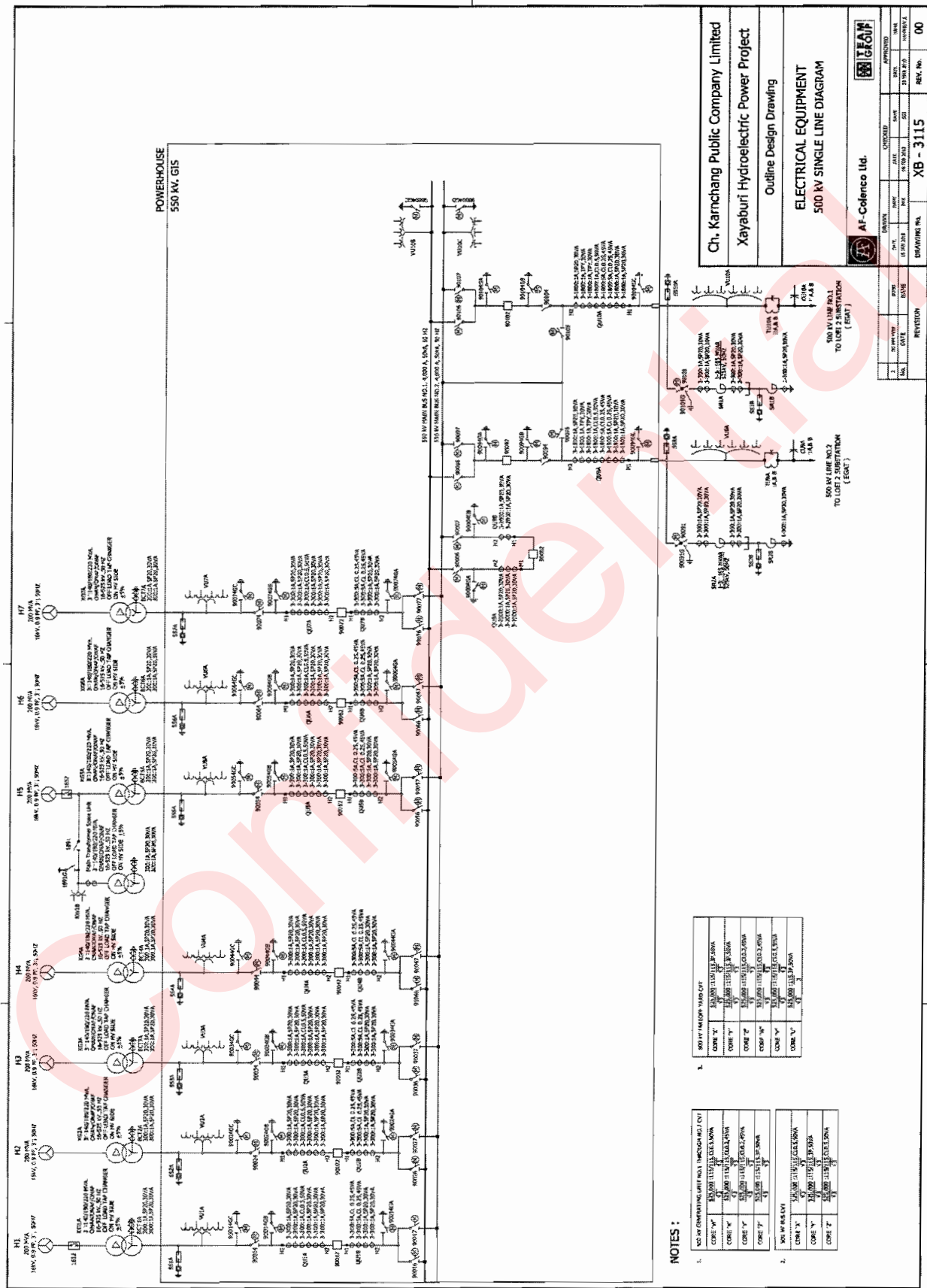


Figure 11.4: 500kV Single Line Diagram

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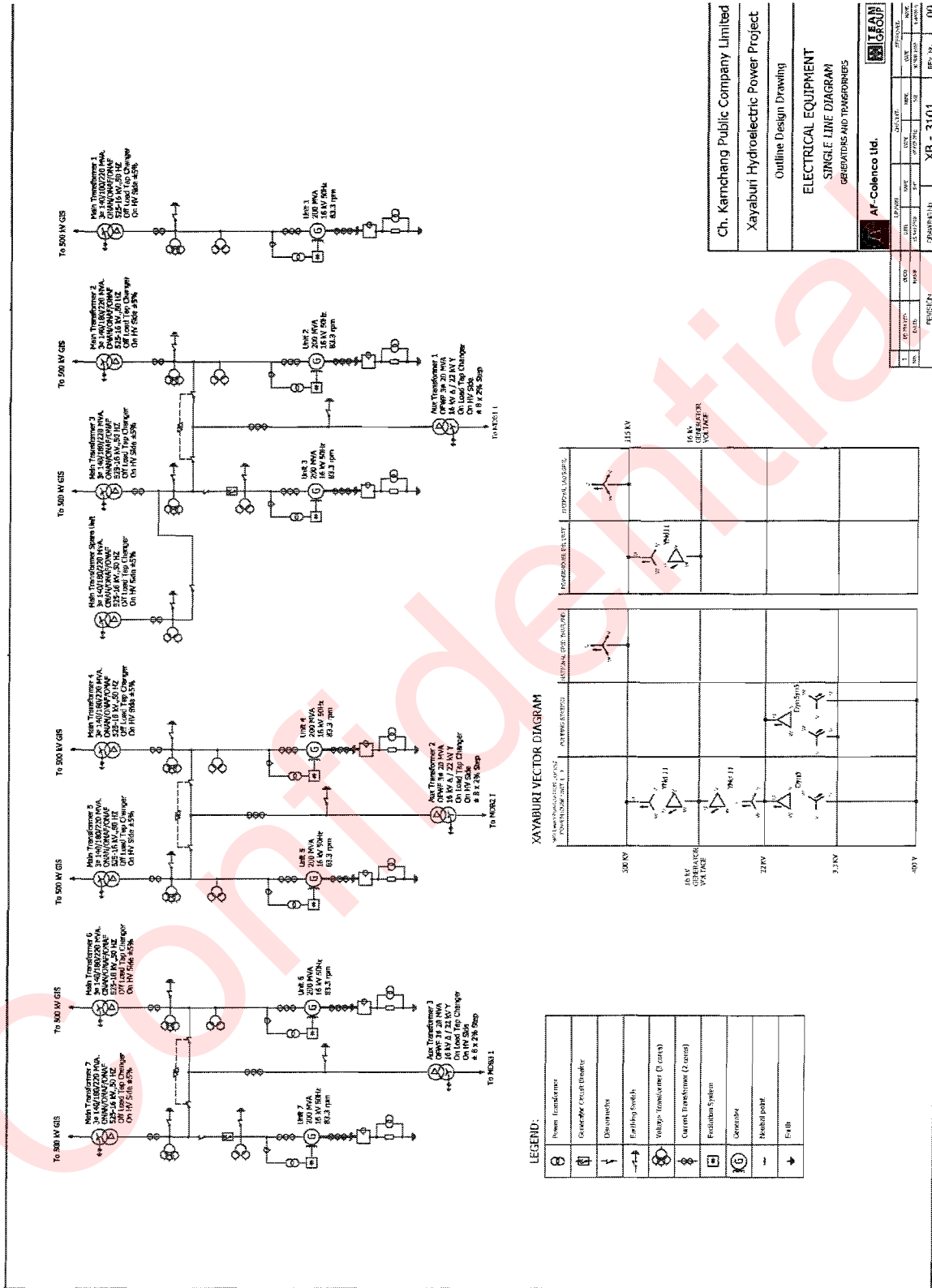


Figure 11.5: Generator & Transformer Single Line Diagram



## Part II: Design Limits

Part II of Schedule 11 sets out the design limits for key components of the Generator System and, where appropriate, the absolute limitations on plant operation, including exceptional voltage and frequency ranges (such limits and limitations being referred to herein as the “**Design Limits**”). The Design Limits shall be fixed for the Term. In respect of the Generating Units, the Design Limits provided herein shall be identical and applicable for each of all seven (7) Generating Units. Testing of such Design Limits, where applicable, shall be in accordance with Schedule 17.

Failure to meet any of the Design Limits as contained in Part II of Schedule 11 may be invoked by EGAT as a reason for non-acceptance of any of the Certificates as stated in Section 2.10.4.

### 1 Power generating equipment

#### 1.1 Generating Units

Each of the seven (7) Generating Units shall have main specifications as follows:

nominal frequency: : 50 Hz  
 nominal capacity at the stator terminals : 182 MW, 0.9 P.F lagging

#### 1.2 Generator Transformers

The step-up transformer of each Generating Unit (the “**Generator Transformer**”) shall each be composed of three-phase two winding transformers with the following main characteristics:

nominal capacity : 220 MVA  
 nominal voltage  
     a) high voltage winding : 525 kV  
     b) low voltage winding : 16 kV  
 connection symbol : Dyn1  
 off load tap changer on high voltage side :  $\pm 5\%$  with 2.5% step  
 high voltage neutral point : directly grounded

### 2 Substation and switchgear

The design of the Xayaburi Switchyard shall be of gas insulated technology. The configuration of the Xayaburi Switchyard shall be double busbar/single breaker with bus coupler. For 500 kV line bays, the bypass disconnect switches shall each be provided for the purpose of using, the bus coupling breaker in place of each 500 kV line breaker as a tie breaker when the line breaker is out of service.

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The equipment at the Xayaburi Switchyard shall comply with the following specifications:

- maximum break current of the circuit breaker : 50 kA
- rated current of the disconnecter : 4,000 A
- short time (3 s) withstand current of the disconnecter : 50 kA
- highest voltage for equipment : 550 kV

### 3 Transmission line conductors

#### From Xayaburi Switchyard to Nabong Substation

##### Conductor

- nominal size : 795 MCM
- code name : ACSR/GA (Condor)
- area : 455 mm<sup>2</sup>
- diameter : 27.72 mm
- number of conductors per phase : 4

### 4 Additional Design Limits

This Paragraph 4 sets out additional Design Limits for the major elements of the Generator System:

#### 4.1 Specification in respect of each Generating Unit

- number of start-up: the Generating Units shall be designed for an average number of five (5) start-up sequences per day per Generating Unit.
- frequency range : 47 to 52 Hz, outside this frequency range the circuit breakers of the Generating Units which are synchronized with the EGAT System shall be tripped and such Generating Units driven to the No load, not excited state;
- voltage range at the Xayaburi Switchyard : 475 kV to 525 kV, if the voltage at the Xayaburi Switchyard falls outside this voltage range for a period longer than fifteen (15) minutes, the Generator may trip the Generator 500 kV Transmission Line;
- generator voltage range: 90% to 110% of generator nominal voltage, if the generator voltage falls outside this voltage range for a period longer than fifteen (15) minutes, the Generator may open the circuit breakers

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of the Generating Units which are synchronized with the EGAT System and such Generating Units driven to the No load, not excited state;

- Speed governor: the governor droop shall be adjustable at any value within the range of 4% - 10% following EGAT's instruction.

#### 4.2 Operating capability

The equipment and control systems for the Facility shall be designed to allow, upon an order issued by the operator of the Generator System, to perform, on a Unit by Unit basis, an automatic startup or shut down sequence.

In the case of a start-up sequence the active power output of the relevant Generating Unit shall, upon synchronization with the EGAT System, be automatically increased to the Registered XYB Unit Minimum Capacity, regardless of whether or not EGAT has issued an active power set point to such Generating Unit. If a Dispatch Instruction is available or upon receipt of an active power set point from EGAT, the power output of the relevant Generating Unit shall, subject to Paragraph 4 of Part IV of Schedule 1, be increased up to the active power set-point specified by the said Dispatch Instruction.

The Generating Units shall not be required to operate as synchronous condensers.

The Facility will be designed to allow to start-up from a Shut Down State and to operate with any number and/or combination of Generating Units without drawing any power from the EGAT System, except such power as may be required to energize the Transmission Line in accordance with Section 3.12.2.

#### **For energization of the Loei 2 Substation bus bars after a complete or partial blackout of the EGAT System**

At least five (5) Generating Units shall be capable of energizing any one transmission circuit of the Transmission Line up to and including the Loei 2 Substation busbar(s), provided that such busbar(s) are fully disconnected from any other incoming or outgoing transmission line. Such energizing shall be carried out as follows:

- Start-up from the Shut Down State to the No load, excited State
- Energizing of the 500 kV Xayaburi Switchyard busbar with the Generating Unit running within the normal voltage range
- Energizing one transmission circuit of the Interconnection Facilities up to the Loei 2 Substation busbars by closing the line circuit breaker at the 500 kV Xayaburi Switchyard.

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**For synchronization of the Generator System with the EGAT System after a complete shutdown of the Facility and the Generator System is disconnected from the EGAT System**

EGAT shall energize one transmission circuit of the Interconnection Facilities up to the Xayaburi Switchyard busbars and the Generator shall synchronize the Generator System with the EGAT System by closing the line circuit breaker at the 500 kV Xayaburi Switchyard.

**5 Maximum fault clearing time**

The maximum fault clearing time pursuant to the occurrence of a fault in the Generator System, including relay operating time and circuit breaker tripping time, shall be as follows:

Line differential protections	:	70 ms
First stage of line distance protections	:	80 ms
Busbar protection	:	70 ms
Unit protection	:	100 ms

In the event of a failure to interrupt the fault current by the Generating Unit circuit breaker or by the line circuit breaker, the circuit breaker failure protection shall trip all functionally adjacent circuit breakers within the duration of two hundred (200) ms after the relevant fault occurs.

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**Schedule 12**  
**THE EGAT TRANSMISSION FACILITIES**

Schedule 12 sets out the basic sizing and design features of the EGAT Transmission Facilities and the Operating Characteristics of the EGAT System, which shall be the basis for the design, construction and operation of the EGAT Transmission Facilities as well as the Generator System.

If available, EGAT shall provide such information as the Generator may reasonably request in order to: (i) complete the design and construction of the Generator System; and (ii) operate the Generator System, provided that such information is not readily available to the Generator by any other means.

**1. Nominal frequency and voltage of the EGAT System**

The nominal frequency of the EGAT System shall be fifty (50) Hz.

For delivery of power from the Generator System to the EGAT System that does not exceed the Registered Stability Limit, the nominal voltage of the EGAT System (measured at the 500 kV busbars, of the Loei 2 Substation) shall be 500 kV.

**2. EGAT Transmission Line**

The EGAT Transmission Line shall consist of a 500 kV double - circuit transmission line having four (4) bundle conductors between the Delivery Point and the Loei 2 Substation.

The parameters and characteristics of the conductor in respect of such transmission lines shall be as follows:

- nominal size : 795 MCM
- code name : CONDOR
- Type ; ACSR/GA
- stranding : 54 x 3.08 A1/7 x 3.08 Steel
- overall diameter : 27.72 mm
- conductor per phase : 4
- length (approximate) : Delivery Point – Loei 2 Substation : 52 km

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### 3. Loei 2 Substation

The Loei 2 Substation shall be a 500kV outdoor conventional substation. The configuration of the Loei 2 Substation shall be of breaker and a half arrangement.

The 500 kV switchgear equipment of the Loei 2 Substation shall comply with the following specifications:

- maximum break current of the circuit breakers : 50 kA
- rated current of the disconnectors : 4,000 A
- short time (1 s) withstand current of the disconnector : 50 kA
- highest voltage for equipment : 550 kV
- insulation level : 1,550 kV

### 4. Operating Characteristics of the EGAT System

The frequency and voltage ranges of the EGAT System shall be as follows:

- system frequency range:
  - normal frequency range : 49.0 Hz - 50.5 Hz
  - exceptional frequency range : 47.0 Hz to 49.0 Hz and 50.5 Hz to 52.0 Hz
- system voltage range (for 500 kV voltage level):
  - normal voltage range : 475 kV to 525 kV
  - exceptional voltage range : 450 kV to 475 kV and 525 kV to 550 kV

Under normal conditions the negative phase sequence current shall not exceed eight per cent (8%).

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**Schedule 13**  
**INTERCONNECTION FACILITIES**

**1 Purpose**

This Schedule 13 sets out the locations of such towers comprised in the Interconnection Facilities referred to in Section 2.6.1(b), the Interconnection Design Criteria referred to in Section 2.6.1(d) and other related matters for the Interconnection Facilities.

**2 General Description**

The Interconnection Facilities shall comprise two (2) towers and two (2) three (3) phase, 500 kV transmission circuits designed and built to span the border and to become an integral part of the Transmission Line. The Interconnection Facilities are located in the Xayaburi Province of the Lao PDR and Loei Province of Thailand.

The EGAT Interconnection Facilities and the Generator Interconnection Facilities shall each comprise in Thailand and the Lao PDR respectively:

- (i) one (1) Dead End Tower located inland from the border.

The Common Interconnection Facilities shall consist of the relevant conductors, ground wires (including optical ground wires), insulators, fittings, and other accessories. The Common Interconnection Facilities shall be designed and built in accordance with the requirement of this Schedule 13 and Prudent Utility Practice.

**3 Tower Locations**

In respect of the actual design and construction of the Interconnection Facilities, both Parties shall locate their respective towers consistent with the requirements provided in Section 2.6.1(b).

The Parties shall further coordinate their respective tower locations so as to provide proper alignment between towers consistent with good engineering practice.

**4 Interconnection Design Criteria**

**4.1 Electrical Design**

Main electrical characteristics of the transmission line comprised in the Interconnection Facilities shall be as follows:

Nominal voltage	:	500	kV
Maximum system voltage	:	550	kV
Basic lightning impulse insulation level (BILS)	:	1,550	kV

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Nominal current	:	3,000	A
Minimum insulator creepage distance (phase to phase voltage)	:	16	mm/kV
Minimum creepage distance	:	8,800	mm
Minimum arcing distance phase to earth	:	3,796	mm

#### 4.2 Wind Loads

Wind loads shall be based on:

- (i) a mean hourly maximum 50-year return period wind speed of 30 m/s, at 10 meters above ground level; and
- (ii) a high intensity wind speed of 72 m/s, which is equivalent to an F-3 scale tornado, as defined by the ASCE Manuals and Reports on Engineering Practices No.74.

#### 4.3 Conductors and ground wires

The safety factor for conductor and ground wire shall be 2.25 at 50-year return period wind and 27°C.

##### 4.3.1 Conductors

nominal size	:	795 MCM
code Name	:	CONDOR
type	:	ACSR/GA
stranding	:	54 x 3.08 Al / 7 x 3.08 Steel
overall diameter	:	27.72 mm.
conductor per phase	:	4
design condition	:	Final tension shall not exceed 22% of ultimate tensile strength at 27°C and no wind condition

The clearance between the conductors and ground level shall be equal to or greater than thirteen (13) meters.

##### 4.3.2 Ground Wires

One (1) OHGW: galvanized steel wire 9.14 mm diameter, 7 x 3.048 mm, extra high strength grade.

One (1) OPGW: overhead ground wire with 36-core optical fibre.

Ground wire sag shall not exceed 75% of the matching sag of the conductor at 27°C and no wind condition.

#### 4.4 Insulators and Insulator Strings

##### 4.4.1 Insulators

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The insulator discs shall be of the cap-and-pin (ball and socket) type. Each insulator disc shall be in accordance with ANSI 29.2 for Wet-process porcelain or toughened glass suspension insulators.

#### 4.4.2 Insulator Strings and Hardware Assemblies

The strength of the insulator string and hardware assembly designs shall be based on the conductor loads multiplied by the appropriate safety factors for each loading condition.

The minimum value of the safety factor for tension strings shall be three (3).

Hardware assemblies shall be designed with appropriate fittings and shall be convenient for application of hot-line maintenance tools.

### 4.5 **Optical Ground Wires (OPGW)**

#### 4.5.1 Requirements for Optical Ground Wires

The characteristics of the Optical Ground Wires (OPGW), other than the optical portion comprised therein, shall conform to the latest edition of the standards of the International Electrotechnical Commission, IEC. The characteristics of the optical portion comprised therein shall conform to the latest edition of the standards of the International Telecommunication Union Recommendations, ITU-T G.652.

The Optical Ground Wires shall consist of a ground wire with an internal optical fiber cable. The optical fiber cable shall comprise thirty-six (36) core optical fibres, having a loose structure and being embedded inside a longitudinal optical tube or spacer, completely surrounded by a cluster of aluminum-clad steel wire strands or combination of aluminum-clad steel wires and aluminum alloy wires strands. The optical tube shall be an aluminum tube or an aluminum covered stainless steel tube or a two-layer tube with aluminum outside layer. This structure shall protect the optical fibers from damages due to external forces and provide waterproofing characteristics to them. The effects of hydrogen contamination shall be minimized by using an adequate hydrogen-absorbing filling compound. The supplier of the OPGW shall provide reasonable evidence to demonstrate that the optical fibers meet the requirements regarding adequate heat resistance in accordance with the relevant specification. Each optical fiber shall comprise optical fiber cladding and optical fiber core. In order to achieve the required performance, the optical fiber cladding shall be manufactured using high grade silica, and the optical fiber core shall be manufactured using doped high grade silica.

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Each reel of OPGW shall have all finished strand wire with no joint or splice and the lay direction of the outer layer shall be left-hand-lay. Splicing of the optical fiber of the OPGW shall be performed by fusion splicing and such joint shall only be allowed to be kept in dedicated joint boxes located on the towers comprised in the Interconnection Facilities. The maximum optical attenuation and the maximum splice loss for the optical fiber core shall be in accordance with the specifications provided in Paragraph 4.8 of this Schedule.

#### 4.5.2 Requirements for Joint Boxes

The joint box shall be air-tight, water-proof, and weather-proof. The cover of the joint box shall be securely fastened to the case by non-loosening fasteners. Both the case and the cover of the joint box shall be made of non-corrosive aluminum alloy/stainless steel or hot dip galvanized steel. The joint box shall be sufficiently rugged and sturdy to withstand the prevailing outdoor climatic and environmental conditions. The joint box shall accommodate sheath protected arc-fusion splices and up to 1.5 m of additional optical fiber on each side of the splice, and guides shall be provided to keep such additional optical fibers well above the allowable bending radius of the optical fiber. The spliced parts of the optical fiber within the joint box shall be reinforced and free from tension after completion of the splicing.

Each joint box shall be provided with one (1) set of terminating materials to be used for the purpose of optical fiber connection. Generator shall provide a 3-way joint box for the Dead End Tower in Thailand.

### 4.6 Towers

#### 4.6.1 Design Requirements

All Dead End Towers shall be designed to support the line conductors with their associated insulator sets, ground wires and all fittings under the specified loading conditions.

The design loads of the Dead End Towers shall follow Reliability Based Design (RBD) criteria (as described in ASCE No. 74 titled "Guidelines for Electrical Transmission Line Structural Loading") as mutually agreed by both Parties. Loading conditions to be applied for tower and foundation design shall be as follows:

1. Climatic or Weather Related Loads: Extreme Wind
2. Failure Containment Loads
3. Construction and Maintenance Loads

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4. High Intensity Wind Loads

5. Impact Resistance Loads

In respect of the Interconnection Facilities, a load factor of 1.3 will be applied for loading condition 1 above and a load factor of 1.0 will be used for all remaining loading conditions.

In the design of all members and bolts, the strength factors of 0.73 will be applied in respect of the Dead End Towers.

#### 4.6.2 Tower Earthing Resistance

Dead End Tower footing earthing resistance shall be less than ten (10) Ohms.

### 4.7 Foundations

The foundation shall be designed to withstand uplift, compression, lateral, settlement, overturning, and sliding, each of which shall be subject to the same loading conditions as applied for the corresponding tower designs.

The safety factors for foundation loads under all loading conditions shall be:

#### 4.7.1 Uplift and Uplift plus Overturning

Dead End Towers, Pad Type 2.5

Dead End Towers, Pile Type 2.7

#### 4.7.2 Compression

Dead End Towers 3.0

The design of foundation shall exclude tower load factors.

### 4.8 Optical Fiber Cable Characteristics

The optical fiber cable shall meet the following requirements:

- (i) Compliant with standard "ITU-T G.652(c)";
- (ii) Wavelength: 1550 nm;
- (iii) Maximum optical attenuation: 0.23 dB per km; and
- (iv) Maximum splice loss: 0.07 dB per joint.

## 5 Scope of Work in respect of the Common Interconnection Facilities

In respect of each transmission circuit, Generator shall procure all equipment required in respect of the Common Interconnection Facilities and be responsible for the

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completion of all stringing work required in respect of the Common Interconnection Facilities, including:

- stringing the conductors up to and connecting them with the respective Dead End Tower
- stringing the OPGW and OHGW up to and connecting them with the respective Dead End Tower
- stringing the optical wire at the respective Dead End Tower down to the relevant joint box.

In respect of the physical integration of the Common Interconnection Facilities to the relevant part of the EGAT Transmission Facilities:

- (i) the physical connection of the corresponding conductors on either side of the relevant Dead End Tower; and
- (ii) the splicing of the optical fibers in the relevant joint box on such Dead End Tower,

shall be carried out by EGAT.

#### **6 Matters related to the Common Interconnection Facilities**

- (a) Generator shall inform EGAT of the additional details regarding the final design of the Common Interconnection Facilities to the extent that such information is necessary for EGAT to design the portion of the EGAT Interconnection Facilities that is adjacent to the Common Interconnection Facilities within twelve (12) Full Calendar Months after the Financial Close Date.
- (b) Generator shall provide to EGAT the following spare parts within thirty (30) days thereafter, deliver to EGAT the spare part set out in Table 13.1 of Schedule 13 at a location in Thailand to be determined by EGAT.

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Table 13.1 Description of the Spare Part

	DESCRIPTION	QUANTITY
1	<b>INSULATORS &amp; HARDWARE</b>	
	1.1 Tension String assemblies for 4x795 MCM ACSR/GA "CONDOR" (Excluding insulators)	3
	1.2 ANSI CLASS 52-11 Porcelain or Glass insulators	50
	1.3 Ground wire dead-end assemblies for GSW	1
2	<b>HARDWARE ASSEMBLY FOR OPGW (36 CORE)</b>	
	2.1 Tension assemblies with accessories	1

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**Schedule 14****METERING SYSTEMS****Part I: Loei 2 Metering System****1 Purpose and Components**

Part I of Schedule 14 describes the **Loei 2 Metering System** to be installed at the Loei 2 Substation in accordance with Section 2.7 in order to measure and record the active energy and reactive energy at the Loei 2 Substation that is transmitted between the Generator System and the EGAT System through the Transmission Line.

The Loei 2 Metering System shall include the following equipment:

- (a) four (4) energy meters, each of which shall be defined as either the “**Main Loei 2 Energy Meter**” or the “**Back-Up Loei 2 Energy Meter**” for the respective circuit end at the Loei 2 Substation, as metering point no. 1 shown in Figure 14.1;
- (b) one (1) spare energy meter;
- (c) one (1) external modem;
- (d) one (1) RS232 to RS485 converter (for external modem);
- (e) one (1) GPS Clock Receiver, outdoor antenna, and additional accessories for standard time source that synchronise with all energy meters of Loei 2 Metering System;
- (f) six (6) current transformers (CTs) and their structures;
- (g) six (6) inductive voltage transformers (VTs) and their structures;
- (h) one (1) metering system cubicle; and
- (i) accessories including the power supply for all energy meters, racks, test blocks, labels, terminal blocks, cables and internal wiring, including all wiring required between the metering system cubicle, the VTs, CTs and the Communications System.

**2 Requirements and specifications in respect of the Loei 2 Metering System****2.1 General requirements**

The design of the Loei 2 Metering System shall meet the following requirements:

- The outputs of the Main Loei 2 Energy Meter and the Back-Up Loei 2 Energy Meter for the same circuit end at the Loei 2 Substation shall be independent of each other, i.e., whatever happens in relation to any one output (regardless of whether such output is a digital or an analog output), the other output shall not be affected or suffer loss of accuracy.

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- There shall be no other equipment (including such equipment installed for indicating and monitoring purposes) connected to the electrical circuit of each Main Loei 2 Energy Meter.

All energy meters comprised in the Loei 2 Metering System shall be compatible with the equipment and software already installed in the EGAT System. Subject to availability at the time of procurement, such energy meters shall be approved by EGAT ensuring that the EGAT automatic meter reading (AMR) system can read the metering data from Loei 2 Metering System.

## 2.2 Energy Meters

The five (5) energy meters comprised in the Loei 2 Metering System shall be 19 inches rack-mounted type with essailec connectors, electronic time of use (TOU) for 3 phase 4 wires 4 quadrants of active and reactive energy measurement type. These energy meters shall be tariff processor and data recorder in the same unit and shall comply with IEC 62052-11 and IEC62053-22 standard.

The accuracy class of such energy meters shall be as follows:

- 0.2 S for the measurements of active energy; and
- 0.5 for the measurements of reactive energy.

All energy meters comprised in the Loei 2 Metering System shall be suitable for the measurement associated with the instrument transformers in paragraph 2.3. of Part I.

Each energy meter shall be equipped with communication ports for the purpose of data collection and time synchronisation, one (1) ethernet port supporting the TCP/IP (IP-based) communication as the main data collection part, one (1) RS485 port for serial communication as the backup data collection path, and one (1) port shall be connected to Global Positioning System (GPS) Clock Receiver for time synchronisation.

Each energy meter shall be connected to the reliable and sufficient power supply to ensure that all energy meters always function correctly all time.

## 2.3 Instrument Transformers

The current transformers (CTs) and inductive voltage transformers (VTs) comprised in the Loei 2 Metering System shall comply with IEC 60044-1, IEC 60044-2 standard.

The characteristics of such CTs shall be as follows:

- nominal voltage: 500 kV
- number of cores for metering purposes: two (2) for each transmission circuit of Transmission Line (one connected to the respective Main Loei 2

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Energy Meter and the other connected to the respective Back-Up Loei 2 Energy Meter)

- rated secondary current of each CT shall be suitable for the measurement associated with the energy meter in Paragraph 2.2 of Part I.
- class of accuracy : 0.2 S

The characteristics of such VTs shall be as follows:

- nominal primary voltage: 500 kV
- nominal secondary voltage: all secondary voltage level of VTs shall be suitable for the measurement associated with the energy meters in paragraph 2.2. of Part I.
- number of cores for metering purposes: two (2) for each transmission circuit of the Transmission Line (one connected to the respective Main Loei 2 Energy Meter and the other connected to the respective Back-Up Loei 2 Energy Meter)
- class of accuracy: 0.2
- the burden of each VT shall be suitable for the voltage measuring circuit which should not cause ferroresonance.

Each CT and each VT comprised in the Loei 2 Metering System shall have more than two (2) cores, which shall be used for the purpose of the EGAT Protective System and other measurements.

#### 2.4 Data Logging, Time Synchronization and Communication

Each energy meter comprised in the Loei 2 Metering System shall record data related to the measurements of the Loei 2 Metering System at regular intervals (the “Logging Period”) as specified in Table 14.1, which shall be maintained for both **Main Loei 2 Energy Meter and Back-Up Loei 2 Energy Meter**: (i) a period of no less than three (3) months for values the Logging Period of which is fifteen (15) minutes; and (ii) a period of no less than three (3) years for values the Logging Period of which is one (1) month. Such data shall be accessible by both EGAT and Generator through the Communication System.

For time reference purposes such energy meters shall be synchronised with the standard time source through the Global Positioning System (GPS) Clock Receiver installed at the Loei 2 Substation as shown in Figure 14.1.

The principle regarding data exchange and communication in respect of the Loei 2 Metering System shall be as described in Figure 14.2 of this Schedule 14.

The communication interface shall be in accordance with Schedule 15 - SCADA AND COMMUNICATION SYSTEMS.

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### 3 Allocation of cost and responsibility in respect of the Loei 2 Metering System

#### 3.1 **Cost associated with the Metering Equipment listed in Paragraph 1 of Part I of Schedule 14**

All the actual cost associated with the procurement, installation and Commissioning Testing of the Metering Equipment listed in Paragraph 1 of Part I of Schedule 14 shall be allocated to both Parties as set out in the following table:

Item	Quantity	Cost borne by	
		Generator	EGAT
(a) Energy meters	5	100%	0%
(b) External modems	1	100%	0%
(c) RS232 to RS485 converter	1	100%	0%
(d) GPS Clock Receiver, outdoor antenna, and accessories	1	100%	0%
(e) Current transformers accuracy 0.2S	6	50%	50%
(f) Inductive voltage transformers accuracy 0.2	6	50%	50%
(g) Metering cubicle and necessary internal accessories (racks, terminal blocks, tests blocks, labels,...) and Power Supply for all energy meters	1	100%	0%
(h) Installation of Loei 2 Metering System	Lot	100%	0%
(i) Supply and installation of interconnection wiring between the metering cubicle, the VT, the CT and the Communication System	Lot	100%	0%

Generator shall compensate EGAT the relevant cost that incurs pursuant to this Paragraph 3.1 by making payment to EGAT in accordance with Section 2.7.1(a). For such payment purpose, EGAT shall require that the bidders of the EGAT Transmission Facilities list separately and clearly identify the relevant cost of each item comprised in the Loei 2 Metering System.

#### 3.2 **Other related cost**

EGAT shall be responsible for other related costs that are associated with:

- (i) the provision of space within the control building;
- (ii) foundation and cableways required for the Loei 2 Metering System;
- (iii) all 500 kV buswork and connectors; and
- (iv) any high voltage protection required by the Loei 2 Metering System;

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Subject to Section 2.7.1(a)(iii), EGAT shall be responsible for the overall design, procurement, installation and Commissioning Testing of the Loei 2 Metering System.

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## Part II: Generator Metering System

### 1 Purpose and Components

Part II of Schedule 14 describes the Generator Metering System to be installed in the Generator System in accordance with Section 2.7 including:

- a. the **Xayaburi Metering System**, to be installed at the Xayaburi Switchyard on each transmission circuit of the outgoing Transmission Line in order to measure and record the active energy and reactive energy at the Xayaburi Switchyard that is transmitted between the Generator System and the EGAT System through the Transmission Line; and
- b. the **Unit Metering System**, to be installed at the high voltage side of each Generating Unit transformer in order to measure and record net active energy, net reactive energy, and Contracted Operating Characteristics (COCs) that is generated or performed by such Generating Unit.

The Xayaburi Metering System shall include the following equipment:

- (a) four (4) energy meters, each of which shall be defined as either the “**Main Xayaburi Energy Meter**” or the “**Back-Up Xayaburi Energy Meter**” for the respective circuit end of the Transmission Line at the Xayaburi Switchyard, as metering point no. 2 shown in Figure 14.1;
- (b) one (1) spare energy meter;
- (c) one (1) external modem;
- (d) one (1) RS232 to RS485 converter (for external modem);
- (e) one (1) GPS Clock Receiver, outdoor antenna, and additional accessories for standard time source that synchronize with all energy meters to be installed in Xayaburi Switchyard;
- (f) six (6) current transformers (CTs) and their structures;
- (g) six (6) inductive voltage transformers (VTs) and their structures;
- (h) one (1) metering system cubicles; and
- (i) accessories including the power supply for all energy meters, racks, test blocks, labels, terminal blocks, cables and internal wiring, including all wiring required between the metering system cubicle, the VTs, CTs and the Communications System.

The Unit Metering System shall include the following equipment:

- (j) seven (7) energy meters, each of which shall be defined as the “**Unit Energy Meter**” for the respective Generating Unit, as metering point no. 3 shown in Figure 14.1;
- (k) one (1) GPS Clock Receiver, outdoor antenna, and additional accessories (if required) for the purpose of time synchronisation of all energy meters of Unit Metering System; the GPS Clock Receiver and relating equipment set for the

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Unit Metering System can use the same set as of the Xayaburi Metering System, depending on the system design;

- (l) twenty-one (21) current transformers (CTs) and their structures;
- (m) twenty-one (21) inductive voltage transformers (VTs) and their structures;
- (n) two (2) metering system cubicles; and
- (o) accessories including the power supply for all energy meters, racks, test blocks, labels, terminal blocks, cables and internal wiring, including all wiring required between the metering system cubicle, the VTs, CTs and the Communications System.

according to using the same backup data collection communication path as of Xayaburi Metering System path, no additional external modem and RS232 to RS485 converter required;

## **2 Requirements and specifications in respect of the Xayaburi Metering System**

### **2.1 General requirements**

The design of the Xayaburi Metering system shall meet the following requirements:

- The outputs of the Main Xayaburi Energy Meter, the Back-Up Xayaburi Energy Meter for the same circuit end at the Xayaburi Switchyard shall be independent of each other, i.e., whatever happens in relation to any one output, the other output shall not be affected or suffer loss of accuracy.
- There shall be no other equipment (including such equipment installed for indicating and monitoring purposes) connected to the electrical circuit of either Main Xayaburi Energy Meter.

All energy meters at Xayaburi Switchyard shall be compatible with the equipment and software already installed in the EGAT System. Subject to availability at the time of procurement, such energy meters shall be approved by EGAT ensuring that the EGAT automatic meter reading (AMR) system can read the metering data from Xayaburi Metering System.

### **2.2 Energy Meters**

The five (5) energy meters at Xayaburi Switchyard shall be 19 inches rack-mounted type with essailec connectors, electronic time of use (TOU) for 3 phase 4 wires 4 quadrants of active and reactive energy measurement type. These energy meters shall be tariff processor and data recorder in the same unit and shall comply with IEC standards, specifically IEC 62052-11 and IEC62053-22.

The accuracy class of such energy meters shall be as follows:

- 0.2S for the measurements of active energy; and

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- 0.5 for the measurements of reactive energy.

All five (5) energy meters at Xayaburi Switchyard shall be suitable for the measurement associated with the instrument transformers in paragraph 2.3 of Part II.

Each energy meter shall be equipped with communication ports for the purpose of data collection and time synchronisation, one (1) ethernet port supporting the TCP/IP (IP-based) communication as the main data collection path, one (1) RS485 port for serial communication as the backup data collection path, and one (1) port shall be connected to Global Positioning System (GPS) Clock Receiver for time synchronisation.

Each energy meter shall be connected to the reliable and sufficient power supply to ensure that all energy meters always function correctly all time.

### 2.3 Instrument Transformers

The current transformers (CTs) and the inductive voltage transformers (VTs) at Xayaburi Switchyard shall comply with IEC 60044-1, IEC 60044-2 standard.

The characteristics of such CTs shall be as follows:

- nominal voltage: 500 kV
- number of cores for metering purposes: two (2) for each transmission circuit of the Transmission Line (one connected to the respective all Main Energy Meters and the other connected to the respective all Back-up Energy Meters)
- rated secondary current of each CT shall be suitable for the measurement associated with the energy meter in Paragraph 2.2 of Part II.
- class of accuracy: 0.2S

The characteristics of such VTs shall be as follows:

- nominal primary voltage: 500 kV
- nominal secondary voltage: all secondary voltage level of VTs shall be suitable for the measurement associated with the energy meter in Paragraph 2.2 of Part II.
- number of cores for metering purposes: two (2) for each transmission circuit of the Transmission Line (one connected to the respective all Main Energy Meters and the other connected to the respective all Back-up Energy Meters)
- class of accuracy: 0.2
- the burden of each VT shall be suitable for the voltage measuring circuit which should not cause ferro resonance.

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The locations of such instrument transformers are shown in attached to Schedule 11, Figure 11.9 “Switchyard Single Line Diagram”.

#### **2.4 Data logging, Time Synchronization and Communication**

Each energy meter at Xayaburi Switchyard shall record data related to the measurements of the Xayaburi Metering System at regular intervals (the “**Logging Period**”) as specified in section “**A. XAYABURI SWITCHYARD**” of Table 14.2, which shall be maintained for both **Main Xayaburi Energy Meter** and **Back-Up Xayaburi Energy Meter**: (i) a period of no less than three (3) months for values the Logging Period of which is fifteen (15) minutes; and (ii) a period of no less than three (3) years for values the Logging Period of which is one (1) month. Such data shall be accessible by both EGAT and Generator through the Communication System.

For time reference purposes such energy meters shall be synchronised with the standard time source through the Global Positioning System (GPS) Clock Receiver installed at the Xayaburi Switchyard as shown in Figure 14.1.

The principle regarding data exchange and communication in respect of the Xayaburi Metering System shall be as described in Figure 14.2 of this Schedule 14.

The communication interface shall be in accordance with Schedule 15 – SCADA AND COMMUNICATION SYSTEMS.

### **3 Requirements and specifications in respect of the Unit Metering System**

#### **3.1 General requirements**

The purposes of the Unit Metering System is measurement net active power (and/or energy) generated from each Generating Unit and Contracted Operating Characteristics (COCs) of each Generating Unit.

The design of the Unit Metering System shall meet the following requirements:

- There shall be no other equipment (including such equipment installed for indicating and monitoring purposes) connected to the electrical circuit of either Unit Energy Meter.
- All energy meters comprised in the Unit Metering System shall be compatible with the equipment and software already installed in the EGAT System. Subject to availability at the time of procurement, such energy meters shall be approved by EGAT ensuring that the EGAT automatic meter reading (AMR) system can read the metering data from the Unit Metering System.

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### 3.2 Unit Energy Meters

The seven (7) energy meters comprised in the Unit Metering System shall be electronic time of use (TOU) for 3 phase 4 wires 4 quadrants of active and reactive energy measurement type. These energy meters shall be tariff processor and data recorder in the same unit and shall comply with IEC standards, specifically IEC 62052-11 and IEC62053-22.

The accuracy class of such energy meters shall be as follows:

- 0.2S for the measurements of active energy; and
- 0.5 for the measurements of reactive energy.

All seven (7) energy meters comprised in the Unit Metering System shall be suitable for the measurement associated with the instrument transformers in paragraph 3.3 of Part II.

Each energy meter shall be equipped with communication ports for the purpose of data collection and time synchronisation, one (1) ethernet port supporting the TCP/IP (IP-based) communication as the main data collection path, one (1) RS485 port for serial communication as the backup data collection path, and one (1) port shall be connected to Global Positioning System (GPS) Clock Receiver for time synchronisation.

Each energy meter shall be connected to the reliable and sufficient power supply to ensure that all energy meters always function correctly all time.

### 3.3 Instrument Transformers

The current transformers (CTs) and the inductive voltage transformers (VTs) comprised in the Unit Metering System shall comply with IEC 60044-1, 60044-2 standard.

The characteristics of such CTs will be as follows:

- nominal voltage: 500 kV
- number of core for metering purposes: one (1) for each Generating Unit
- rated secondary current of each CT: shall be suitable for the measurement associated with the energy meter in Paragraph 3.2 of Part II.
- class of accuracy : 0.2S

The characteristics of such VTs will be as follows:

- nominal primary voltage : 500 kV
- nominal secondary voltage : shall be suitable for the measurement associated with the energy meters in paragraph 3.2 of Part II.
- number of core for metering purposes: one (1) for each Generating Unit

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- class of accuracy: 0.2
- the burden of each VT shall be suitable for the voltage measuring circuit which should not cause ferro resonance.

The locations of such instrument transformers are shown in attached to Schedule 11, Figure 11.9 “Switchyard Single Line Diagram”.

### 3.4 Data Logging, Time Synchronization and Communication

Energy meters comprised in Unit Metering System shall record data related to the measurements of each Generating Unit at regular intervals (the “**Logging Period**”) as specified in section “**B. XAYABURI POWER PLANT**” of Table 14.2, which shall be maintained for **Unit Energy Meter**: (i) a period of no less than three (3) months for values the Logging Period of which is fifteen (15) minutes; (ii) a period of no less than forty-five (45) days for values the Logging Period of which is one (1) minute; and (iii) a period of no less than three (3) years for values the Logging Period of which is one (1) month. Such data shall be accessible by both EGAT and Generator through the Communication System.

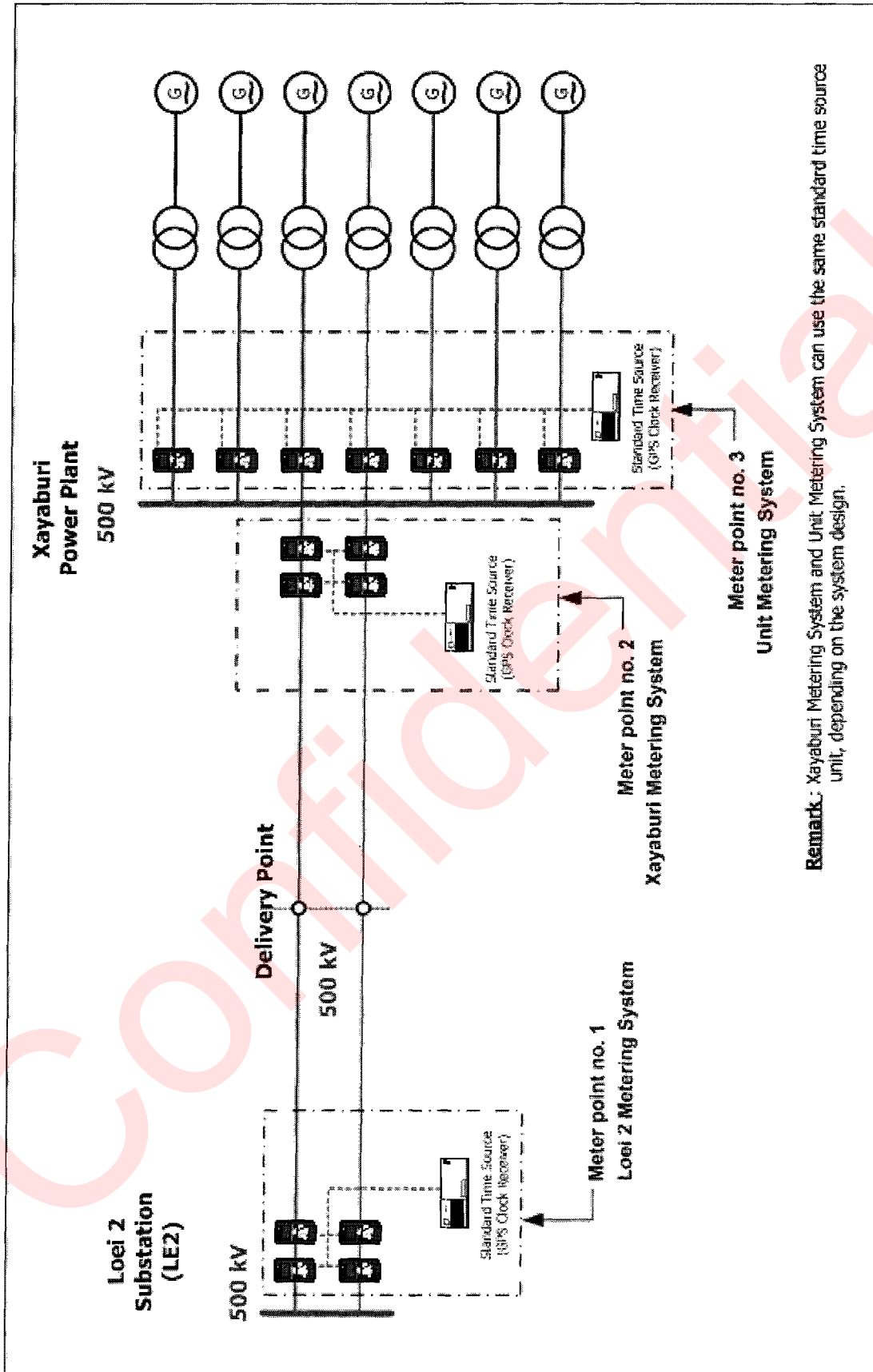
For time reference purposes such energy meters shall be synchronised with the standard time source through the Global Positioning System (GPS) Clock Receiver installed at the Xayaburi Switchyard as shown in Figure 14.1. This GPS Clock Receiver and relating equipment set can use the same set as of the Xayaburi Metering System, depending on the system design.

The principle regarding data exchange and communication in respect of the Unit Metering System shall be as described in Figure 14.2 of this Schedule 14.

The communication interface will be in accordance with Schedule 15 - SCADA AND COMMUNICATION SYSTEMS.

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**Benchmark:** Xayaburi Metering System and Unit Metering System can use the same standard time source unit, depending on the system design.

Figure 14.1 Metering points for Xayaburi Hydroelectric Power Project

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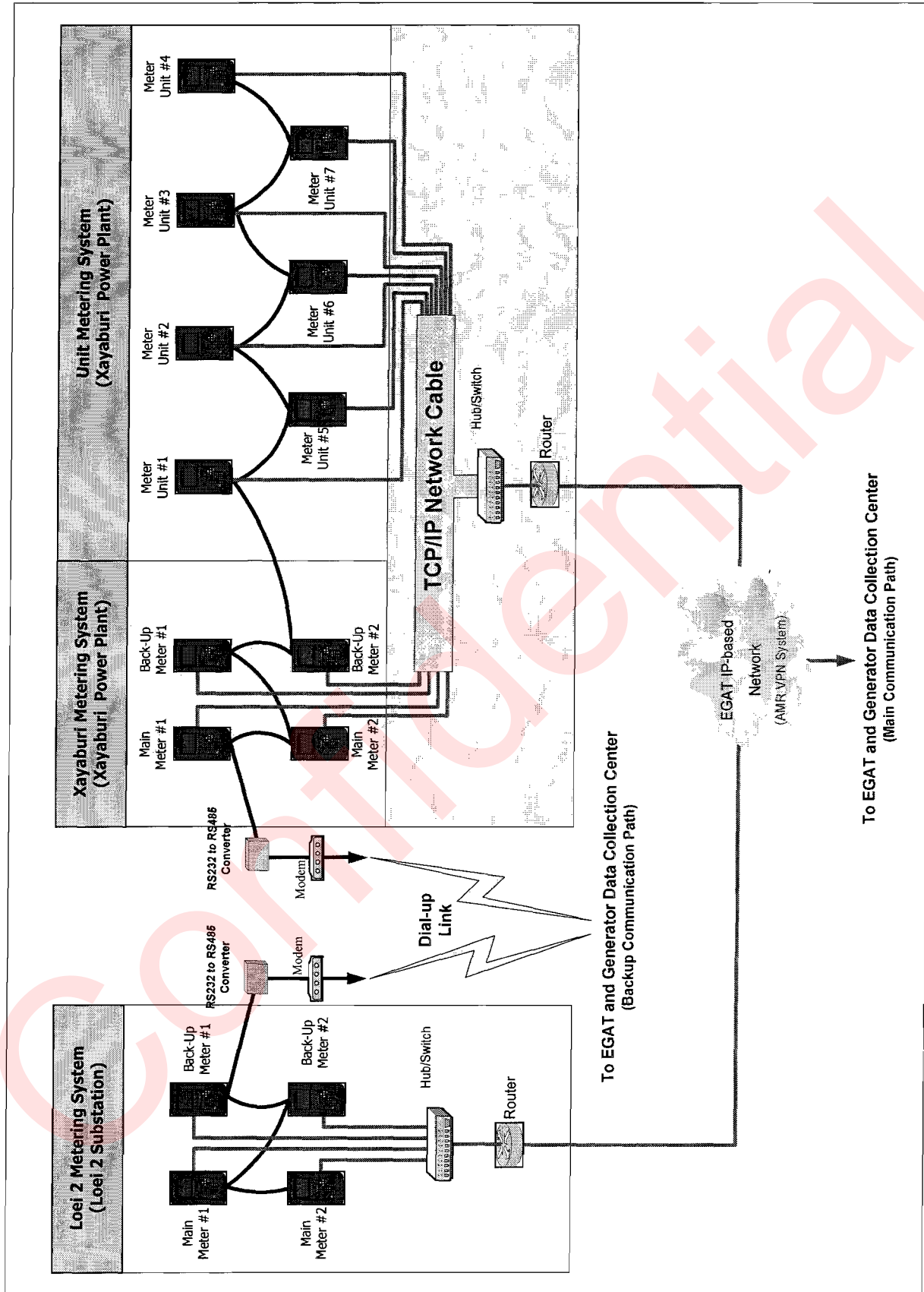


Figure 14.2 Data accessing network for Xayaburi Hydroelectric Power Project

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TABLE 14.1 LOEI 2 METERING SYSTEM

METERED QUANTITY	UNIT	LOCATION	METERING DIRECTION	ACCURACY	LOGGING PERIOD	DATA AND UNIT LOGGED IN ENERGY METER
ACTIVE ENERGY (MAIN METERING)	MWh	ALL CIRCUITS, LOEI 2 SUBSTATION - XAYABURI SWITCHYARD (MAIN ENERGY METERS)	IMPORT/EXPORT	0.2S	15 minutes	ACTIVE POWER (MW)
					MONTHLY	ACTIVE ENERGY (MWh)
ACTIVE ENERGY (BACK-UP METERING)	MWh	ALL CIRCUITS, LOEI 2 SUBSTATION - XAYABURI SWITCHYARD (BACK-UP ENERGY METERS)	IMPORT/EXPORT	0.2S	15 minutes	ACTIVE POWER (MW)
					MONTHLY	ACTIVE ENERGY (MWh)
REACTIVE ENERGY (MAIN METERING)	MVArh	ALL CIRCUITS, LOEI 2 SUBSTATION - XAYABURI SWITCHYARD (MAIN ENERGY METERS)	IMPORT/EXPORT	0.5	15 minutes	REACTIVE POWER (MVAr)
					MONTHLY	REACTIVE ENERGY (MVArh)
REACTIVE ENERGY (BACK-UP METERING)	MVArh	ALL CIRCUITS, LOEI 2 SUBSTATION - XAYABURI SWITCHYARD (BACK-UP ENERGY METERS)	IMPORT/EXPORT	0.5	15 minutes	REACTIVE POWER (MVAr)
					MONTHLY	REACTIVE ENERGY (MVArh)
All THREE PHASE SECONDARY VOLTAGE LINE TO NUETRAL (MAIN METERING)	Volt	ALL CIRCUITS, LOEI 2 SUBSTATION - XAYABURI SWITCHYARD (MAIN ENERGY METERS)	-	-	15 minutes	SECONDARY VOLTAGE LINE TO NUETRAL (Volt)
All THREE PHASE SECONDARY VOLTAGE LINE TO NUETRAL (BACK-UP METERING)	Volt	ALL CIRCUITS, LOEI 2 SUBSTATION - XAYABURI SWITCHYARD (BACK-UP ENERGY METERS)	-	-	15 minutes	SECONDARY VOLTAGE LINE TO NUETRAL (Volt)
All THREE PHASE SECONDARY LINE CURRENT (MAIN METERING)	Amp	ALL CIRCUITS, LOEI 2 SUBSTATION - XAYABURI SWITCHYARD (MAIN ENERGY METERS)	-	-	15 minutes	SECONDARY LINE CURRENT (Amp)

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All THREE PHASE SECONDARY LINE CURRENT (BACK-UP METERING)	Amp	ALL CIRCUITS, LOEI 2 SUBSTATION - XAYABURI SWITCHYARD (BACK-UP ENERGY METERS)	-	-	15 minutes	SECONDARY LINE CURRENT (Amp)
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TABLE 14.2 GENERATOR METERING SYSTEM

A. XAYABURI SWITCHYARD (XAYABURI METERING SYSTEM)						
METERED QUANTITY	UNIT	LOCATION	METERING DIRECTION	ACCURACY	LOGGING PERIOD	DATA AND UNIT LOGGED IN ENERGY METER
ACTIVE ENERGY (MAIN METERING)	MWh	ALL CIRCUITS, XAYABURI SWITCHYARD - LOEI 2 SUBSTATION (MAIN ENERGY METERS)	IMPORT/EXPORT	0.2S	15 minutes	ACTIVE POWER (MW)
					MONTHLY	ACTIVE ENERGY (MWh)
ACTIVE ENERGY (BACK-UP METERING)	MWh	ALL CIRCUITS, XAYABURI SWITCHYARD - LOEI 2 SUBSTATION (BACK-UP ENERGY METERS)	IMPORT/EXPORT	0.2S	15 minutes	ACTIVE POWER (MW)
					MONTHLY	ACTIVE ENERGY (MWh)
REACTIVE ENERGY (MAIN METERING)	MVArh	ALL CIRCUITS, XAYABURI SWITCHYARD - LOEI 2 SUBSTATION (MAIN ENERGY METERS)	IMPORT/EXPORT	0.5	15 minutes	REACTIVE POWER (MVAr)
					MONTHLY	REACTIVE ENERGY (MVArh)
REACTIVE ENERGY (BACK-UP METERING)	MVArh	ALL CIRCUITS, XAYABURI SWITCHYARD - LOEI 2 SUBSTATION (BACK-UP ENERGY METERS)	IMPORT/EXPORT	0.5	15 minutes	REACTIVE POWER (MVAr)
					MONTHLY	REACTIVE ENERGY (MVArh)
All THREE PHASE SECONDARY VOLTAGE LINE TO NUETRAL (MAIN METERING)	Volt	ALL CIRCUITS, XAYABURI SWITCHYARD - LOEI 2 SUBSTATION (MAIN ENERGY METERS)	-	-	15 minutes	SECONDARY VOLTAGE LINE TO NUETRAL (Volt)
All THREE PHASE	Volt	ALL CIRCUITS, XAYABURI	-	-	15 minutes	SECONDARY VOLTAGE

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SECONDARY VOLTAGE LINE TO NUETRAL (BACK-UP METERING)		SWITCHYARD - LOEI 2 SUBSTATION (BACK-UP ENERGY METERS)				LINE TO NUETRAL (Volt)
All THREE PHASE SECONDARY LINE CURRENT (MAIN METERING)	Amp	ALL CIRCUITS, XAYABURI SWITCHYARD - LOEI 2 SUBSTATION (BACK-UP ENERGY METERS)	-	-	15 minutes	SECONDARY LINE CURRENT (Amp)
All THREE PHASE SECONDARY LINE CURRENT (BACK-UP METERING)	Amp	ALL CIRCUITS, XAYABURI SWITCHYARD - LOEI 2 SUBSTATION (BACK-UP ENERGY METERS)	-	-	15 minutes	SECONDARY LINE CURRENT (Amp)

**B. XAYABURI POWER PLANT (UNIT METERING SYSTEM)**

METERED QUANTITY	UNIT	LOCATION	METERING DIRECTION	ACCURACY	LOGGING PERIOD	DATA AND UNIT LOGGED IN ENERGY METER
ACTIVE ENERGY (UNIT METERING)	MWh	ALL UNIT ENERGY METERS FOR EACH GENERATING UNIT	IMPORT/EXPORT	0.2S	1 minute	ACTIVE POWER (MW)
					15 minutes	ACTIVE POWER (MW)
					MONTHLY	ACTIVE ENERGY (MWh)
REACTIVE ENERGY (UNIT METERING)	MVarh	ALL UNIT ENERGY METERS FOR EACH GENERATING UNIT	IMPORT/EXPORT	0.5	1 minute	REACTIVE POWER (MVar)
					15 minutes	REACTIVE POWER (MVar)
					MONTHLY	REACTIVE ENERGY (MVarh)
All THREE PHASE SECONDARY VOLTAGE LINE TO NUETRAL (UNIT METERING)	Volt	ALL UNIT ENERGY METERS FOR EACH GENERATING UNIT	-	-	15 minutes	SECONDARY VOLTAGE LINE TO NUETRAL (Volt)
All THREE PHASE SECONDARY	Amp	ALL UNIT ENERGY METERS FOR	-	-	15 minutes	SECONDARY LINE CURRENT

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LINE CURRENT (UNIT METERING)		EACH GENERATING UNIT				(Amp)
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### Part III: Meter Reading Check Procedures

#### 1 Check procedure for the Meter Readings in respect of the Generator Metering System and the Loei 2 Metering System

For the purpose of determining the electrical energy in accordance with Schedule 7 and preparing the Daily Confirmation Statement as set out in Section 6, the consistency and the effectiveness in respect of the Meter Readings as recorded by the Generator Metering System and the Loei 2 Metering System for the relevant Logging Periods shall be checked according to the procedures set out in Part III of the Schedule 14.

The applications of Meter Reading Check Procedures for the Generator Metering System and the Loei 2 Metering System as set out in this Part IV of Schedule 14, including the relevant conclusions pursuant thereto, shall be as follows:

- (i) The Dual Meters Consistency Check procedure that is described for the two (2) energy meters at a given circuit end shall also be applicable for all other circuit ends.

For the sake of simplicity the applications of such procedures are described only for transmission circuit 1 at the Loei 2 Substation.

- (ii) The Parallel Meters Consistency Check procedure that is described for the four (4) energy meters for the Loei 2 Metering System shall also be applicable for the Xayaburi Metering System.

For the sake of simplicity the applications of such procedures are described only for the Loei 2 Substation.

For reference purposes, the two (2) transmission circuits of the Transmission Line shall be identified as transmission circuit 1 and transmission circuit 2, respectively.

For the avoidance of doubt, all Meter Readings referred to in Part IV of this Schedule 14 shall concern Active Power only.

#### 1.1 **Dual Meters Consistency Check**

##### 1.1.1 Daily Dual Meters Consistency Check for the Dual Meters Readings at a particular circuit end

The Main Energy Meter and the Back-Up Energy Meter for a given circuit end shall be defined as a pair of “**Dual Meters**”. The Meter Readings of a given pair of Dual Meters for the same given duration shall be defined as the “**Dual Meters Readings**” for such circuit end and duration.

In respect of a given time period, the Dual Meters Readings at a given circuit end may be either consistent or inconsistent in accordance with

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the “**Dual Meters Consistency Check**”, which shall be performed by Generator on a daily basis for the 24-hour period to which it relates as follows:

Let: LOEI 2Main<sub>1</sub> be the Meter Reading of the Main Loei 2 Energy Meter for transmission circuit 1 for the given day;

LOEI 2Back<sub>1</sub> be the Meter Reading of the Back-Up Loei 2 Energy Meter for transmission circuit 1 for the given day;

LOEI 2DualCons<sub>1</sub> be the Dual Consistency Factor between LOEI 2Main<sub>1</sub> and LOEI 2Back<sub>1</sub>;

|A| be the absolute value of A; and

Avr (A, B) be the arithmetic average of A and B, or (A+B)/2;

Then: LOEI 2DualCons<sub>1</sub>

$$= \frac{|LOEI\ 2Main_1 - LOEI\ 2Back_1|}{Avr(LOEI\ 2Main_1, LOEI\ 2Back_1)}$$

The results of such Dual Meters Consistency Check shall be as follows:

- (1) if LOEI 2DualCons<sub>1</sub> is equal to or less than 0.006
  - (i) the Dual Meters Readings (LOEI 2Main<sub>1</sub> and LOEI 2Back<sub>1</sub>) shall be declared as consistent; and
  - (ii) the Meter Reading of the relevant Main Energy Meter (LOEI 2Main<sub>1</sub>) shall be declared as “**Effective Type 1 Meter Reading**”; or
- (2) if LOEI 2DualCons<sub>1</sub> is greater than 0.006
  - (i) the Dual Meters Readings (LOEI 2Main<sub>1</sub> and LOEI 2Back<sub>1</sub>) shall be declared as inconsistent; and
  - (ii) the procedures set out in Paragraph 1.1.2 of Part IV of Schedule 14 shall apply.

1.1.2 Procedures when the Dual Meters Readings at a given circuit end are inconsistent:

In the event that the Dual Meters Readings at a given circuit end (the first circuit end) are inconsistent pursuant to the above Dual Meters Consistency Check, the effectiveness of such Dual Meters Readings shall be further verified as follows:

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- (1) In the event that the Dual Meters Readings at the other circuit end of the same substation (the second circuit end) are consistent, the procedures set out in Paragraph 1.2 of Part IV of Schedule 14 shall apply.
- (2) In the event that the Dual Meters Readings at the other circuit end of the same substation (the second circuit end) are also inconsistent, the Accuracy Tests for the four (4) energy meters of the relevant substation shall be conducted as soon as practicable.

1.1.3 The results for the Dual Meters Consistency Check at both circuit ends of a given substation are shown in Part A of Table 14.4.

## 1.2 Parallel Meters Consistency Check

The configuration of the Xayaburi Switchyard and the Loei 2 Substation shall be defined as satisfying the “**Parallel Operation Condition**” if:

- (1) there is only one electrical node (500 kV busbars) at the Xayaburi Switchyard;
- (2) there is only one electrical node (500 kV busbars) at the Loei 2 Substation; and
- (3) the two (2) transmission circuits of the transmission lines are both energized.

In the event that the conditions set out in Paragraph 1.1.2(1) of Part IV of Schedule 14 are satisfied and unless there is evidence that the requirements of Parallel Operation Condition are not satisfied for the relevant day, Parallel Meters Consistency Checks shall be performed for all pairs of Metering Readings at the same substation, each of which comprising one Meter Reading at the first circuit end and one Meter Reading at the second circuit end, as follows:

Let: LOEI 2Main<sub>1</sub> be the Meter Reading of the Main Energy Meter for transmission circuit 1 which is inconsistent for the given day;

LOEI 2Main<sub>2</sub> be the Meter Reading of the Main Energy Meter for transmission circuit 2 which is consistent for the given day; and

LOEI 2ParaCons<sub>M1M2</sub> be the Parallel Consistency Factor between LOEI 2Main<sub>1</sub> and LOEI 2Main<sub>2</sub>;

Then:  $LOEI\ 2ParaCons_{M1M2} = \frac{|LOEI\ 2Main_1 - LOEI\ 2Main_2|}{LOEI\ 2Main_2}$

The results of such Parallel Meters Consistency Check for LOEI 2ParaCons<sub>M1M2</sub> shall be as follows:

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- (1) if  $LOEI\ 2ParaCons_{M1M2}$  is equal to or less than 0.012, the two Meter Readings ( $LOEI\ 2Main_1$  and  $LOEI\ 2Main_2$ ) shall be declared as consistent; and
- (2) if  $LOEI\ 2ParaCons_{M1M2}$  is greater than 0.012, the two Meter Readings ( $LOEI\ 2Main_1$  and  $LOEI\ 2Main_2$ ) shall be declared as inconsistent.

The Parallel Meters Consistency Check for all other pairs of energy meters shall be performed in the same manner.

Part B of Table 14.4 summarizes all possible cases resulting from such Parallel Meters Consistency Check, which shall specify:

- (i) whether each of the four (4) pairs of Meter Readings defined above are consistent or inconsistent in accordance with the Parallel Meter Consistency Check;
- (ii) the characterization regarding the effectiveness of the Meter Readings at such first circuit end and the applicable value to be used for the determination of the Net Electrical Energy and the preparation of the Daily Confirmation Statement, as applicable, as further provided in Paragraph 1.3 of Part IV of Schedule 14; and
- (iii) any Accuracy Tests required to be conducted, as applicable.

### 1.3 Characterization regarding Consistency and Effectiveness of Meter Readings

- (a) The Dual Meter Readings of two (2) energy meters at a given circuit end shall be characterized as either consistent or inconsistent in accordance with the Dual Meter Consistency Check, as provided in Paragraph 1.1.1 of Part IV of Schedule 14.
- (b) The Meter Readings of any combination of two (2) energy meters at the same substation, each of which associated with different circuit ends, shall be characterized as either consistent or inconsistent in accordance with the Parallel Meter Consistency Check, as provided in Paragraph 1.2 of Part IV of Schedule 14.
- (c) The Meter Reading of the Main Energy Meter at a given circuit end shall be characterized as “**Effective Type 1 Meter Reading**” if the Dual Meter Readings at such circuit end are characterized as consistent in accordance with the Dual Meter Consistency Check.

For the determination of the Net Electrical Energy and the preparation of the Daily Confirmation Statement, the applicable value to be used for such circuit end shall be equal to such Effective Type 1 Meter Reading.

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- (d) The Meter Reading of either the Main Energy Meter or the Back-Up Energy Meter at a given circuit end shall be characterized as either “**Effective Type 2 Meter Reading**” or “**Deemed Effective Type 1 Meter Reading**”, as applicable, according to the results pursuant to the Parallel Meter Consistency Check, as provided in Part B of Table 14.4.

For the determination of the Net Electrical Energy and the preparation of the Daily Confirmation Statement, the applicable value to be used for such circuit end shall be equal to such Effective Type 2 Meter Reading or Deemed Effective Type 1 Meter Reading, as applicable.

- (e) The Meter Reading of either the Main Energy Meter or the Back-Up Energy Meter at a given circuit end shall be characterized as “**Deemed Effective Type 2 Meter Reading**” according to the results pursuant to the Parallel Meter Consistency Check, as provided in Part B of Table 14.4.

For the determination of the Net Electrical Energy and the preparation of the Daily Confirmation Statement, the applicable value to be used for such circuit end shall be equal to ninety (90%) of the Deemed Effective Type 2 Meter Reading.

- (f) The Meter Readings of both the Main Energy Meter and the Back-Up Energy Meter at a given circuit end shall be characterized as “**Deemed Effective Type 3 Meter Readings**” according to the results pursuant to the Parallel Meter Consistency Check, as provided in Part B of Table 14.4.

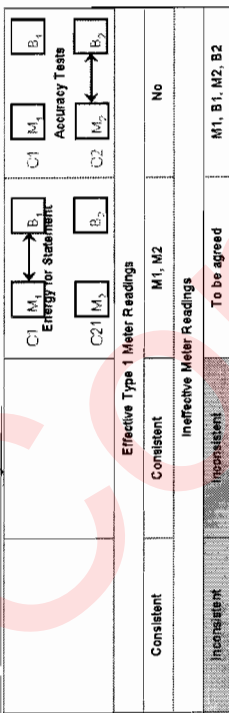
For the determination of the Net Electrical Energy and the preparation of the Daily Confirmation Statement, the applicable value to be used for such circuit end shall be equal to ninety (90%) of the Effective Type 1 Meter Reading of the other circuit end at the same substation.

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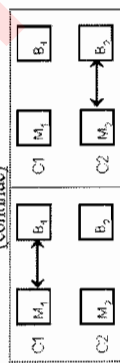
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**Table 14.4 Meter Reading Check Procedures**

Part A Dual Meters Consistency Check



Part A Dual Meters Consistency Check  
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Part B Parallel Meters Consistency Check

	Effective Type 1 Meter Reading		Effective Type 2 Meter Reading		Deemed Effective Type 1 Meter Reading		Deemed Effective Type 2 Meter Reading		Energy for Statement	Accuracy Tests
1	Inconsistent	Consistent	Inconsistent	Consistent	Inconsistent	Inconsistent	Inconsistent	Inconsistent	B1	M1
2	Inconsistent	Consistent	Consistent	Inconsistent	Consistent	Consistent	Consistent	Consistent	M1	B1
3	Inconsistent	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent	M1	M1, B1
4	Inconsistent	Consistent	Inconsistent	Consistent	Consistent	Consistent	Consistent	Consistent	B1	M1, B1
5	Inconsistent	Consistent	Consistent	Inconsistent	Consistent	Consistent	Consistent	Consistent	M1	M1, B1
6	Inconsistent	Consistent	Consistent	Consistent	Inconsistent	Consistent	Consistent	Consistent	M1	M1, B1
7	Inconsistent	Consistent	Consistent	Consistent	Consistent	Consistent	Inconsistent	Inconsistent	B1	M1, B1
8	Inconsistent	Consistent	Inconsistent	Consistent	Inconsistent	Inconsistent	Inconsistent	Inconsistent	90% M1	M1, B1
9	Inconsistent	Consistent	Consistent	Inconsistent	Consistent	Consistent	Consistent	Consistent	90% B1	M1, B1
10	Inconsistent	Consistent	Inconsistent	Consistent	Inconsistent	Inconsistent	Inconsistent	Inconsistent	90% B1	M1, B1
11	Inconsistent	Consistent	Consistent	Inconsistent	Consistent	Consistent	Consistent	Consistent	90% M1	M1, B1
12	Inconsistent	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent	Consistent	90% M2	M1, B1
13	Inconsistent	Consistent	Inconsistent	Consistent	Consistent	Consistent	Consistent	Consistent	90% M2	M1, B1
14	Inconsistent	Consistent	Consistent	Inconsistent	Consistent	Consistent	Consistent	Consistent	90% M2	M1, B1
15	Inconsistent	Consistent	Consistent	Consistent	Inconsistent	Inconsistent	Inconsistent	Inconsistent	90% M2	M1, B1
16	Inconsistent	Consistent	Inconsistent	Consistent	Inconsistent	Inconsistent	Inconsistent	Inconsistent	90% M2	M1, B1

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**1.4 Matters related to Meter Reading Check Procedures**

- (a) The provisions in Part IV of this Schedule 14 shall not prejudice any right and obligation of either Party set out in Sections 6 and 7 of this Agreement.
- (b) In respect of the Parallel Meter Consistency Checks, the Parties shall agree upon Commissioning on whether it is necessary to take into account the actual characteristics of both transmission circuits and the associated details, as applicable.
- (c) Unless otherwise agreed by the Parties, the characterization regarding the consistency and/or the effectiveness of the relevant Meter Readings for a given energy meter in a given day, as defined in Paragraph 1.3 of Part IV of Schedule 14, shall be valid and applicable for the whole 24-hour period of such day. The identification for the exact time during such given day at which any change in the characterization regarding the consistency and/or the effectiveness of the relevant Meter Readings first occurs shall not be required.
- (d) In the event that any relevant part of the Meter Reading Check Procedures cannot be performed for a given day for any reason (including the case where the Parallel Operation Condition is not satisfied during part or whole of such a day or the case where one energy meter of a given pair of Dual Meters is taken out for Accuracy Tests), the Parties shall determine the consistency and/or the effectiveness of the relevant Meter Readings for such energy meter, as defined in Paragraph 1.3 of Part IV of Schedule 14, by referring to the results in respect of such relevant part of Meter Reading Check Procedures for: (i) the immediately preceding day; and (ii) the immediately subsequent day. Provided that there is neither inconsistency between such results nor disagreement by either Party, the characterization regarding the consistency and/or the effectiveness of the relevant Meter Readings for such energy meter, as defined in Paragraph 1.3 of Part IV of Schedule 14, for the period during which the relevant part of the Meter Reading Check Procedures cannot be performed shall be based on the corresponding characterization that results for the immediately preceding day and the immediately subsequent day, as applicable.
- (e) Unless otherwise agreed by the Parties, the Accuracy Tests that are performed pursuant to Table 14.4 shall be conducted specifically for such energy meters the testing of which is required by such Table 14.4, and shall not be conducted for the energy meters the testing of which is not required thereby.
- (f) In the event that Accuracy Tests is required to be carried out, the Parties shall use best effort to enhance the quality of the measurements for electrical energy during the period of such testing.

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- (g) In the event that failure on the Communication System occurs, the Party that first discovers the occurrence of such failure shall inform the other Party immediately and both Parties shall make all necessary arrangements in order to communicate the Meter Readings for the duration of such failure to each other.

## 2 **Meter Readings associated with the preparation of Daily Confirmation Statements, Daily Metering Statements and Meter Reconciliation Statements**

### 2.1 **Daily Confirmation Statement**

With respect to the Generator Daily Confirmation Statement and the EGAT Daily Confirmation Statement provided in Sections 6.1 and 6.2, respectively, the amounts of electrical energy contained therein that are calculated on the basis of Meter Readings shall be determined in accordance with the following principles:

- (1) Unless otherwise agreed by the Parties, the Meter Readings that are used by the relevant Party for such calculation shall be the applicable values specified in Paragraphs 1.3(c) to 1.3(f) of Part IV of Schedule 14, as appropriate.
- (2) In the event that the applicable value for any Meter Reading that is required for the determination of the Net Electrical Energy in accordance with Paragraphs 1.3(c) to 1.3(f) of Part IV of Schedule 14 is not available, including the case provided in Paragraph 1.1.2(2) of Part IV of Schedule 14, the Party that prepares such Daily Confirmation Statement shall propose to the other Party an assessment of the relevant Meter Reading to be used for such determination (including the relevant rationale). Such assessment may be based on the applicable values for the Meter Readings from the energy meters that are characterized as either Effective Type 1 Meter Readings, Effective Type 2 Meter Readings or Deemed Effective Type 1 Meter Readings, all as defined in Paragraph 1.3 of Part IV of Schedule 14, at the other substation in respect of the same transmission circuit adjusted for the line losses between the two substations, as applicable.

### 2.2 **Daily Metering Statement**

- (1) **In respect of the Xayaburi Metering System and the Loei 2 Metering System**

In respect of a given day, Generator shall prepare and submit to EGAT a “**Generator Daily Metering Statement**” and EGAT shall prepare and submit to Generator an “**EGAT Daily Metering Statement**”, as applicable, each such statement being attached to the corresponding Daily Confirmation Statement prepared by the same Party, which shall include the relevant information regarding the Meter Readings of all

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energy meters comprised in the Xayaburi Metering System and the Loei 2 Metering System, respectively, as set out in Schedule 28.

(2) In respect of the Unit Metering System

In respect of any given day during which Test Energy occurs, Generator shall include in the Generator Daily Metering Statement the relevant information regarding the Meter Readings of all energy meters comprised in the Unit Metering System (the “Unit Energy Meters”) as set out in Schedule 28, which shall include:

- (i) the start time and the finish time of the relevant Test Energy; and
- (ii) in respect of each hour of such day during which Test Energy occurs, the Meter Readings for such Unit Energy Meters that are associated with the relevant testing that occurs within such hour recorded at the end of each Logging Period of one (1) minute for the period during which Test Energy occurs.

### 2.3 Meter Reconciliation Statement

With respect to the Meter Reconciliation Statement provided in Section 2.7.6(a), Generator shall:

- (1) for Accuracy Tests associated with Effective Type 1 Meter Readings, Effective Type 2 Meter Readings or Deemed Effective Type 1 Meter Readings, either:
  - (i) in the event that the test result is consistent with the applicable values selected for the preparation of Daily Confirmation Statement, confirm the respective applicable values that have been selected for the relevant calculation; or
  - (ii) in the event that the test result is inconsistent with the applicable values selected for the preparation of Daily Confirmation Statement, propose the revised Meter Readings or deemed Meter Readings in order to recalculate the relevant amounts of electrical energy contained in such Daily Confirmation Statement, if applicable;
- (2) for Accuracy Tests associated with Deemed Effective Type 2 Meter Readings, either:
  - (i) in the event that the test result is consistent with the applicable values selected for the preparation of Daily Confirmation Statement, confirm the Deemed Effective Type 2 Meter Readings that have been selected and prepare the relevant

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adjusted amounts of electrical energy based on such previously selected applicable values; or

- (ii) in the event that the test result is inconsistent with the applicable values selected for the preparation of Daily Confirmation Statement, propose the revised Meter Readings or deemed Meter Readings in order to recalculate the relevant amounts of electrical energy contained in such Daily Confirmation Statement, if applicable;

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## **Part IV: Measurement of Operating Water Head, Turbine Flow, and Spillway**

This Part IV of the Schedule 14 sets out the determination of the Operating Water Head for the purpose of the Agreement.

### **1. The Operating Water Head**

The Operating Water Head can be calculated from the different water level between the upstream pond and tailwater which the water level of upstream pond and tailwater are measured by the Upstream Water Level Measurements and the Tailrace Water Level Measurements respectively. The location of the Upstream Water Level Measurements and the Tailrace Water Level Measurements are shown in Figure 14.3.

Detailed location of the measuring points shall be chosen in such a way that the influences of the flows are minimal. The Generator shall propose the final design of the water measurement locations to EGAT for approval within two (2) years after the Execution Date.

The Generator may later propose to EGAT for approval a new measuring concept other than stated herein if there will be a better water measuring technology available at the time of installation or better understanding of the water measuring system during detailed design or after discussion among the experts.

The general specifications of the water level measurements are as follows:

#### **1.1 Upstream Water Level**

The Upstream Water Level Measurement shall have accuracy of  $\pm 1\text{cm}$  and shall be installed to measure water level at the upstream of power intake. The measuring range shall be 265.00mAsl to 280mAsl. There are one (1) main Upstream Water Level Measurement (UWLM (main)) and four (4) backup Upstream Water Level Measurements (UWLM (backup 1)) to UWLM (backup 4)) which are located as shown in Figure 14.3. The Generator shall provide analog signals of the Upstream Water Level Measurement (main) and the Upstream Water Level Measurement (backup 1) to EGAT in accordance with Schedule 15 SCADA AND COMMUNICATION SYSTEMS. In the event that the main Upstream Water Level Measurement can not accurately represent the actual upstream water level, a back-up Upstream Water Level Measurement selected by EGAT shall be used instead. Frequency of reading is once every 15 minutes or as later agreed between the Generator and EGAT. The Generator shall keep the Upstream Water Level Measurement (main) and the back-up Upstream Water Level Measurement according to Section 3.11.

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### 1.2 Tailrace Water Level

The Tailrace Water Level Measurement shall have accuracy of  $\pm 1\text{cm}$  and shall be installed to measure water level at the tailwater. The measuring range shall be 233.00mAsl to 271mAsl. There are one (1) main Tailrace Water Level Measurement (TWLM (main)) and five (5) backup Tailrace Water Level Measurements (TWLM (backup 1) to TWLM (backup 5)) which are located as shown in Figure 14.3. The Generator shall provide analog signals of the Tailrace Water Level Measurement (main) and the Tailrace Water Level Measurement (backup 1) to EGAT in accordance with Schedule 15 SCADA AND COMMUNICATION SYSTEMS. In the event that Tailrace Water Level Measurement (main) can not accurately represent the actual upstream water level, a Tailrace Water Level Measurement selected by EGAT shall be used instead. Frequency of reading is once every 15 minutes or as later agreed between the Generator and EGAT. The Generator shall keep the Tailrace Water Level Measurement (main) and the Tailrace Water Level Measurements according to Section 3.11.

### 1.3 Operating Water Head

The Operating Water Head shall be determined by the Upstream Water Level (main) less the Tailrace Water Level (main) and the Generator shall provide analog signal of the Operating Water Head to EGAT in accordance with Schedule 15 SCADA AND COMMUNICATION SYSTEMS. Frequency of calculation is once every 15 minutes or as later agreed between the Generator and EGAT. The Generator shall keep the calculation value of the Operating Water Head according to Section 3.11.

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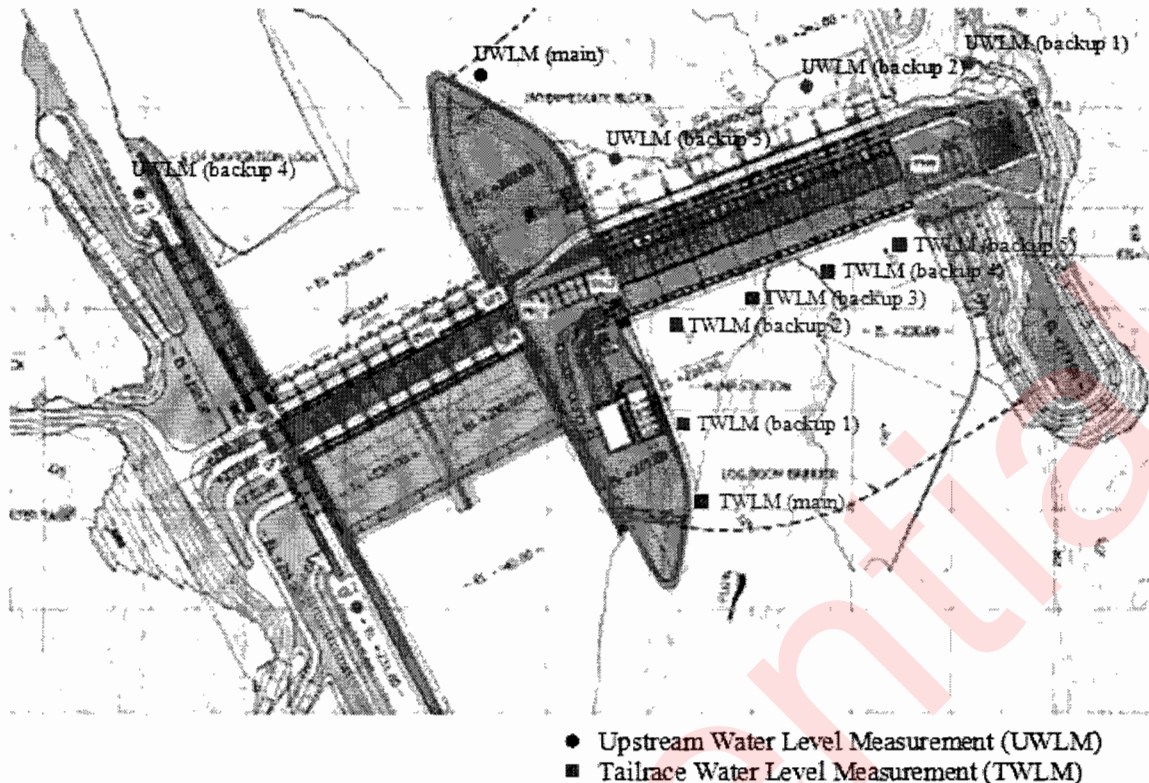


Figure 14.3 Location of the water level measurements

## **2. Turbine Flow Measurement**

The Generator shall provide turbine flow measurements for all Generating Units based on computation using an internal program/algorithm of the digital turbine governor and turbine characteristics (hill chart) which use blades, wicket gates positions, unit output, and measured net head. The Generator shall provide all calculated turbine flows to EGAT in accordance with Schedule 15 SCADA AND COMMUNICATION SYSTEMS. Specifications of the turbine flow measurement are in accordance with Table 14.3. The measurement range of each turbine Flow is 0-700 m<sup>3</sup>/s and its accuracy shall be  $\pm 3.0\%$ . The Generator shall keep the data of turbine flows according to Section 3.11.

## **3. Spilled Water Measurement**

Spilled water through the spillway shall be calculated using information of Upstream Water Level, Tailrace Water Level, and radial gates openings. The Generator shall provide the gate openings (position) to EGAT in accordance with Schedule 15 SCADA AND COMMUNICATION SYSTEMS. The Spilled Water Measurement shall provide volume of spilled water with  $\pm 10\%$  accuracy. The Generator shall keep the data of Spilled Water according to Section 3.11.

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**Table 14.3 Specification of Water Measurement Systems**

<b>Process Parameter</b>	<b>Location</b>	<b>Measurement Method</b>	<b>Measuring Range</b>	<b>Parameter Accuracy</b>	<b>Sampling Period</b>
Turbine Flow	Each turbine	Computation	0-700.00m <sup>3</sup> /s	± 3.0%	15 minutes
Spilled Water	Spillway	Computation	According to the respective height of the radial gates	± 10%	1 hour
Water Volume used	Navigation lock	Computation based on the volume of the navigation lock, the upstream and downstream water levels	According to the respective upstream and downstream water levels	± 1.0%	Once every locks' operation
Water Used	Fish Passing Facility	Computation based on the Operating Water Head and the position of the different gates within the system including fish ladder, gravity water supply for the upstream migration and surface bypass collector for downstream migration	According to the Operating Water Levels (1 to 3) and the positions of the respective gates	± 10%	1 hour
Differential pressure across the trash racks	Each power intake	Water level transducer	0.00 – 2.00 m	± 2.0%	15 minutes

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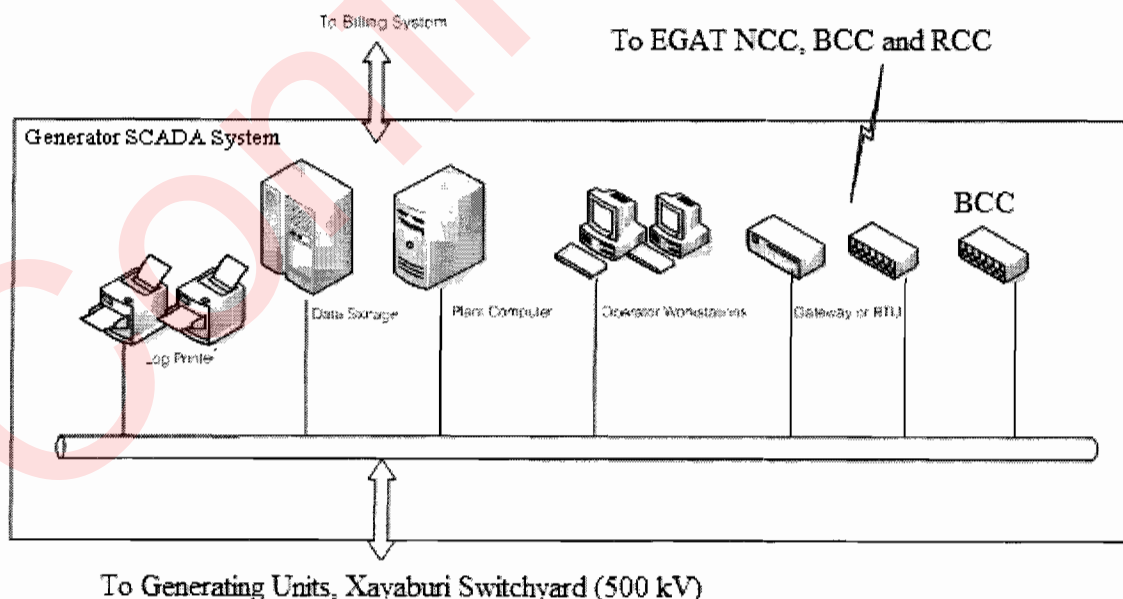
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**Schedule 15****SCADA AND COMMUNICATION SYSTEMS****Part I: Generator SCADA System****1 Description of the Generator SCADA System**

The Generator SCADA System shall be a distributed and computerized system. Its main functions will be:

- Human-machine interface for the operators in the Main Control Room of the Generator System
- Processing of control and Dispatch Instructions
- Exchange of information with EGAT's National Control Center (NCC), Backup Control Center (BCC) and Regional Control Center (RCC)
- Exchange of information with the Billing System
- Exchange of information with the local control system of each Generating Unit, the XYB Switchyard
- Data logging

The functional block diagram of the Generator SCADA System is shown below:



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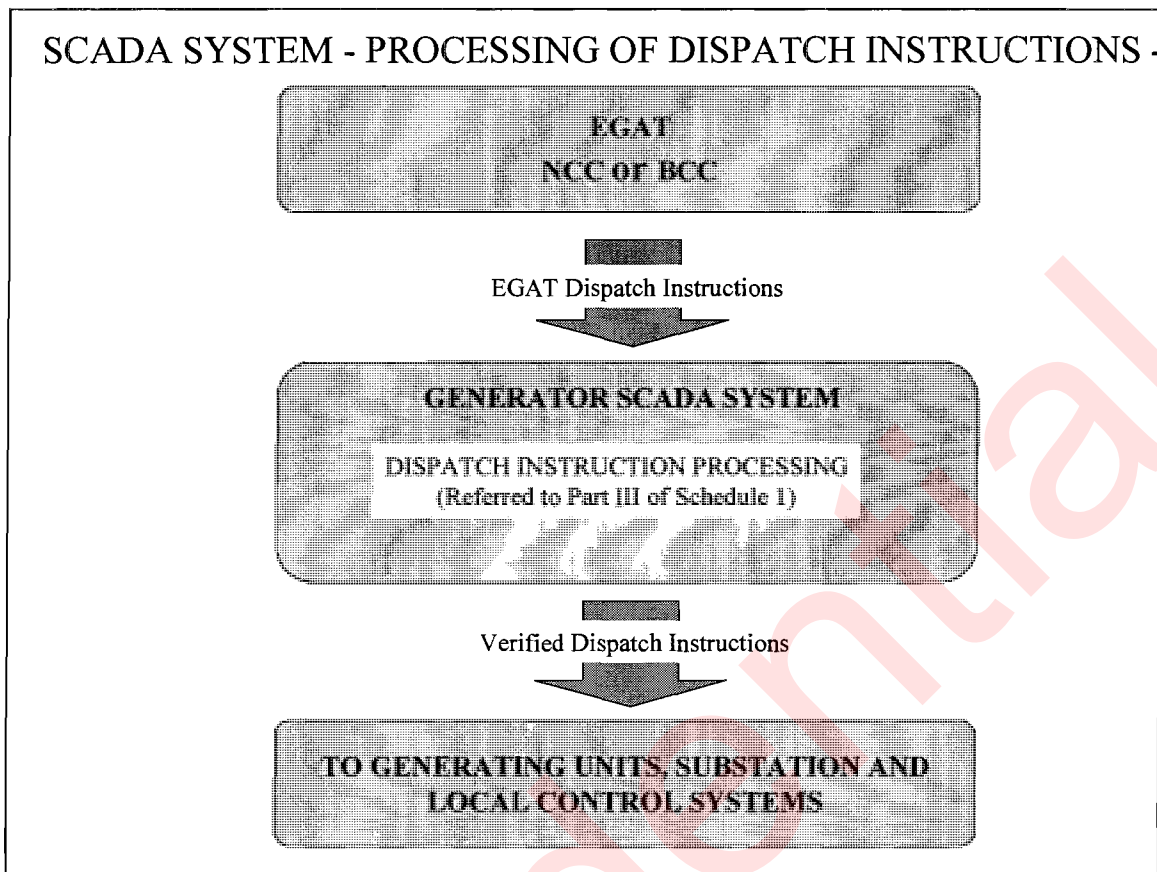
## 2 Processing of Dispatch Instructions

The Facility will be Dispatched on a Unit by Unit basis.

- Prior to being sent to the respective Generating Unit, the Generator SCADA System will check and modify, as appropriate, a Dispatch Instruction in accordance with Paragraph 3 of Part IV of Schedule 1.
- The load set point of a synchronized Generating Unit will be as follows:
  - the first load set point after the NCC or BCC receives the “on” status of the AGC shall be the prevailing actual generation of such Generating Unit
  - the load set point when the AGC mode is set at the remote mode (AGC status = “on”) shall be the power to be generated by such Generating Unit as instructed by the NCC or BCC
  - the load set point when the AGC mode is set at the local mode (AGC status = “off”) shall be entered into the Generator SCADA System by the operator of the Generator System.
- The voltage set point or Mvar set point, defined as “Automatic Generation Voltage Control (AGVC), of a synchronized Generating Unit will be as follows:
  - the first voltage set-point or Mvar set point after the NCC or BCC receives the “on” status of the AGVC shall be the prevailing actual voltage or Mvar of such Generating Unit
  - the voltage set-point or Mvar set point when the AGVC mode is set at the remote mode (AGVC status = “on”) shall be the voltage to be controlled or Mvar to be generated by such Generating Unit as instructed by the NCC or BCC
  - the voltage or Mvar set point when the AGVC mode is set at the local mode (AGVC status = “off”) shall be entered into the Generator SCADA System by the operator of the Generator System.
  - The Generator shall provide both voltage control and Mvar control for EGAT to perform Automatic Generation Voltage Control (AGVC).
- In respect of any Generating Unit that is synchronized with the EGAT System, upon the request from EGAT’s NCC or BCC, the AGC and the AGVC mode will be set to “on” by the operator of the Generator System.

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### **3 Exchange of Information and Interface between the Generator SCADA System and the EGAT Control Centers**

- Exchanges for control and operation purposes shall make use of following means:
  1. Facsimile machine or other higher performance media as mutually agreed: to transmit Daily Generation Programs.
  2. Party Line Communication System: upon request from NCC or BCC, the operator of the Facility will enter the following Dispatch Instructions into the Generator SCADA System:
    - a. Unit start up or shutdown orders;
    - b. Unit AGC mode “on” or “off”;
    - c. Unit AGVC mode “on” or “off”;
    - d. Dispatch instructions; and
    - e. Switchyard switching instructions.
  3. The Generator SCADA System will exchange information with EGAT's National Control Center (NCC), Backup Control Center (BCC) and EGAT's Regional Control Center (RCC) via optic fibers. The communication links shall be used to transmit binary and digital information listed in Paragraphs 4 and 5 of Part I of Schedule 15. The link between the Generator SCADA System

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and the NCC and the BCC shall be used by EGAT to transmit the Automatic Generation Control (AGC) and Automatic Generation Voltage Control (AGVC) instructions.

- The communication protocols shall be IEC 60870-5-104 for both NCC , BCC and RCC depending on communication media.
- Communication to NCC, BCC and RCC shall use either: (i) dedicated gateways; or (ii) RTU's, either of which shall implement the protocol specified above. In the event that Generator uses dedicated gateways for such purposes, Generator shall ensure that such gateways can perform properly and satisfy all requirements of this Agreement. In the event that Generator uses RTU, EGAT shall provide the appropriate assistance to Generator for the procurement of such RTU.
- For each Generating Unit, the NCC and BCC shall send individual AGC and AGVC set-point instructions to the Generator SCADA System. In the event that Generator uses RTU's, this instruction will be acquired by the Generator SCADA System as an analog signal (4-20 mA).
- The details of the information exchange between the Generator System and the NCC, BCC and RCC as provided in Paragraphs 4 and 5 of Part I of this Schedule 15 shall be subject to the actual configuration of the Generator System and Xayaburi Switchyard.

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#### 4 Information Exchange with NCC and BCC

##### 4.1 The Generator SCADA System to NCC and BCC

###### (a) Binary Information

Point Description	Number of information
Unit Breaker Status	7
Unit AGC mode (Local/Remote)	7
Unit Line KV mode (Local/Remote)	7
Unit Mvar mode (Local/Remote)	7
Unit Governor Free (Droop) Operate on/off	7
Unit Excitation Status on/off	7

###### (b) Analog information

Point Description	Number of information
Unit Terminal Voltage (A-C)	7
Unit Frequency (Hz) measured	7
Unit Gross Active Power (MW)	7
Unit Gross Reactive Power (Mvar)	7
Unit Net Active Power (MW)	7
Unit Net Reactive Power (Mvar)	7
Unit Upper Net MW Regulation Limit (MW)	7
Unit Lower Net MW Regulation Limit (MW)	7
Unit Load Set-point feed-back (MW)	7
Unit Upper Line kV Regulation Limit (kV)	7
Unit Lower Line kV MW Regulation Limit (kV)	7
Unit kV Set-point feed-back (kV)	7
Unit Upper Net Mvar Regulation Limit (Mvar)	7
Unit Lower Net Mvar Regulation Limit (Mvar)	7
Unit Mvar Set-point feed-back (Mvar)	7
Unit Loading Rate (MW/min)	7
Unit De-Loading Rate (MW/min)	7

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Unit Percent of Gate Limit (%)	7
Unit Actual Turbine Water Flow (m <sup>3</sup> /s)	7
Operating Water Head (m)	1
Upstream Water Level (m) (1 for main and 1 for backup)	2
Tailrace Water Level (m) (1 for main and 1 for backup)	2
Spillway Gate Opening (%)	All
Spilled Water (m <sup>3</sup> /s)	1

#### 4.2 NCC and BCC to the Generator SCADA System (Set points for Generating Units)

##### Analog information

Point Description	Number of information
Unit Net MW Target Set-point Instruction (MW)	7
Unit Line kV Target Set-point Instruction (kV)	7
Unit Net MVAR Target Set-point Instruction (MVar)	7

#### 4.3 The Generator SCADA System to NCC and BCC (Information regarding the Xayaburi Switchyard)

##### (a) Binary information

Point Description	Number of information
Status of Circuit Breakers (“a” contact)	All
Status of Disconnecting Switches	All
Status of Earthing Switches	All
Loss of Potential alarm (Energy sale)	All

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(b) Analog information

Point Description	Number of information
500 kV Bus voltage (A-C)	2
500 kV Bus Frequency (Hz)	2
500 kV Line voltage (A-C)	2
Line Active Power Flow (MW)	2
Line Reactive Power Flow (MVar)	2

5 Information Exchange with RCC5.1 The Generator SCADA System to RCC(a) Binary Information

Point Description	Number of information
Unit Breaker Status	7
Unit AGC mode (Local/Remote)	7
Unit KV mode (Local/Remote)	7
Unit Mvar mode (Local/Remote)	7
Unit Governor Free (Droop) Operate on/off	7
Unit Excitation Status on/off	7

(b) Analog information

Point Description	Number of information
Unit Terminal Voltage (A-C)	7
Unit Frequency (Hz) measured	7
Unit Gross Active Power (MW)	7
Unit Gross Reactive Power (Mvar)	7
Unit Net Active Power (MW)	7
Unit Net Reactive Power (Mvar)	7
Unit Upper Net MW Regulation Limit (MW)	7

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Unit Lower Net MW Regulation Limit (MW)	7
Unit Load Set-point feed-back (MW)	7
Unit Upper Line kV Regulation Limit (kV)	7
Unit Lower Line kV MW Regulation Limit (kV)	7
Unit kV Set-point feed-back (kV)	7
Unit Upper Net Mvar Regulation Limit (Mvar)	7
Unit Lower Net Mvar Regulation Limit (Mvar)	7
Unit Mvar Set-point feed-back (Mvar)	7
Unit Loading Rate (MW/min)	7
Unit De-Loading Rate (MW/min)	7
Unit Percent of Gate Limit (%)	7
Unit Actual Turbine Water Flow (m <sup>3</sup> /s)	7
Operating Water Head (m)	1
Upstream Water Level (m) (1 for main and 1 for backup)	2
Tailrace Water Level (m) (1 for main and 1 for backup)	2
Spillway Gate Opening (%)	All
Spilled Water (m <sup>3</sup> /s)	1

## 5.2 The Generator SCADA System to RCC (Information regarding the Xayaburi Switchyard)

### (a) Binary information

Point Description	Number of information
Status of Circuit Breakers (“a” contact)	All
Status of Disconnecting Switches	All
Status of Earthing Switches	All
Loss of Potential alarm (Energy sale)	All

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(b) Analog information

<b>Point Description</b>	<b>Number of information</b>
500 kV Bus voltage (A-C)	2
500 kV Bus Frequency (Hz)	2
500 kV Line voltage (A-C)	2
Line active power flow (MW)	2
Line reactive power flow (MVar)	2

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## Part II: Communication System

The Communication System shall be provided between the EGAT System and the Generator System as indicated in Diagram 15.1 “Communication Network”.

### 1 Scope of Supply

The Generator Communication System and the EGAT Communication System shall each comprise equipment that is necessary for both systems to fully satisfy the respective requirements.

### 2 Application

The application for the Communication System shall be as follows:

#### a. Data Communication

Data communication links shall be provided from two sets of multiservice switches at Generator system to be connected to EGAT’s data communication network at Loei 2 Substation. Each set of multiservice switch shall be included one set of IP/MPLS router and one set of LAN switch. The standard channelized E1 with G.703 interfacing shall be provided for the connections between the Generator’s multiservice switches and the Loei 2’s multiservice switches.

Data communication between Generator and EGAT shall be provided as follows:

#### (a) Metering System

(i) Ethernet interfacing ports of the Generator’s multiservice switches shall be provided for Automatic Meter Reading (AMR) of the Generator Metering System (one port for each meter unit).

(ii) Ethernet interfacing ports of EGAT’s multiservice switches shall be provided by EGAT for Automatic Meter Reading (AMR) of the Loei 2 Metering System (one port for each meter unit).

#### (b) SCADA System

Ethernet interfacing ports from the Generator’s multiservice switches shall be provided for the relevant Gateway or IP-Remote Terminal Unit (IP-RTU) of the Generator to communicate with EGAT’s SCADA System. Two Ethernet interfacing ports are required for each of the following control centers:

(i) EGAT’s National Control Center (NCC);

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- (ii) EGAT's Back-up Control Center (BCC) and
- (iii) EGAT's Regional Control Center (RCC).

(c) Fault Recording System

- (i) Ethernet interfacing port(s) of the Generator's multiservice switch(es) shall be provided for Digital Fault Recorder (DFR) of the Generator Fault Recording System (one port for each recorder unit).
- (ii) Ethernet interfacing port(s) of EGAT's multiservice switch(es) shall be provided by EGAT for Digital Fault Recorder (DFR) of the Loei 2 Fault Recording System (one port for each recorder unit).

## 2.2 Teleprotection

For each transmission circuit of the Transmission Line, VF and 64 kbps communication channels and teleprotection signaling equipment shall be provided for teleprotection purposes as indicated in Schedule 16 "Protective System and Fault Recording System".

## 2.3 Voice Communication

Voice communication between Generator and EGAT shall be provided as follows:

(a) Telephone System

- (i) Subscriber extensions from Generator's PABX shall be provided for Automatic Meter Reading (AMR) of the Generator Metering System (one extension for each meter unit is required).
- (ii) Subscriber extensions from Generator's PABX shall be provided for operators at the Generator Main Control Room and the Switchyard Control Room (at least two extensions for each control room are required). These extension lines shall be used as back-up of communication of item (b) (Party Line Communication System) which is prepared for operational and control purposes.
- (iii) One subscriber extension line from Generator's PABX shall be provided for facsimile unit at the Main Control Room of the Generator System.

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Tie line trunk connection between Generator's and EGAT's telephone systems shall be provided from the Generator's PABX to EGAT's telephone system via Loei 2 Substation. One E1 CAS or E1 Qsig signaling of DTI (Digital Trunk Interface) interfacing or other new technology shall be provided for the connection between the Generator's PABX and Loei 2's PABX. For synchronization of the two PABXs, the Generator's E1 interfacing (the slave) shall derive clock synchronization from EGAT's E1 interfacing (the master). This interfacing shall support all mentioned voice communication applications between Generator and EGAT.

(b) Party Line Communication System

One channel of VF 4 wire interface and party line desk sets shall be provided for the operators at the Generator Main Control Room and the Switchyard Control Room to communicate with operators at EGAT's NCC, RCC, BCC and Loei 2 Substation.

(c) Back-up Voice Communication System

In addition to the two mentioned voice communication systems, back-up voice communication based on public telephone services shall be provided at the Generator Main Control Room and the Switchyard Control Room.

**3 Communication Transmission Network**

Communication transmission network between the Xayaburi Switchyard and the Loei 2 Substation shall be as follows:

- (a) Fiber optic transmission system, optical fiber cables with terminal equipment and signal regenerator for each 100 km (approx.) of transmission line length, being used for data communication, teleprotection and voice communication; and
- (b) Power line carrier transmission system, being used for teleprotection.

Communication transmission system configuration is shown in Diagram 15.2 "Configuration of Telecommunication System".

**4 Procurement Requirements For Main Communication Equipment**

The optical fiber terminal equipment, the power line carrier electronics equipment and the teleprotection signaling equipment of this Schedule 15 that is comprised in the Generator Communication System and the EGAT Communication System shall be of the same manufacturer and the same make/model.

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The optical fiber cable and such communication equipment as above shall be defined as the **“Relevant Portion”**.

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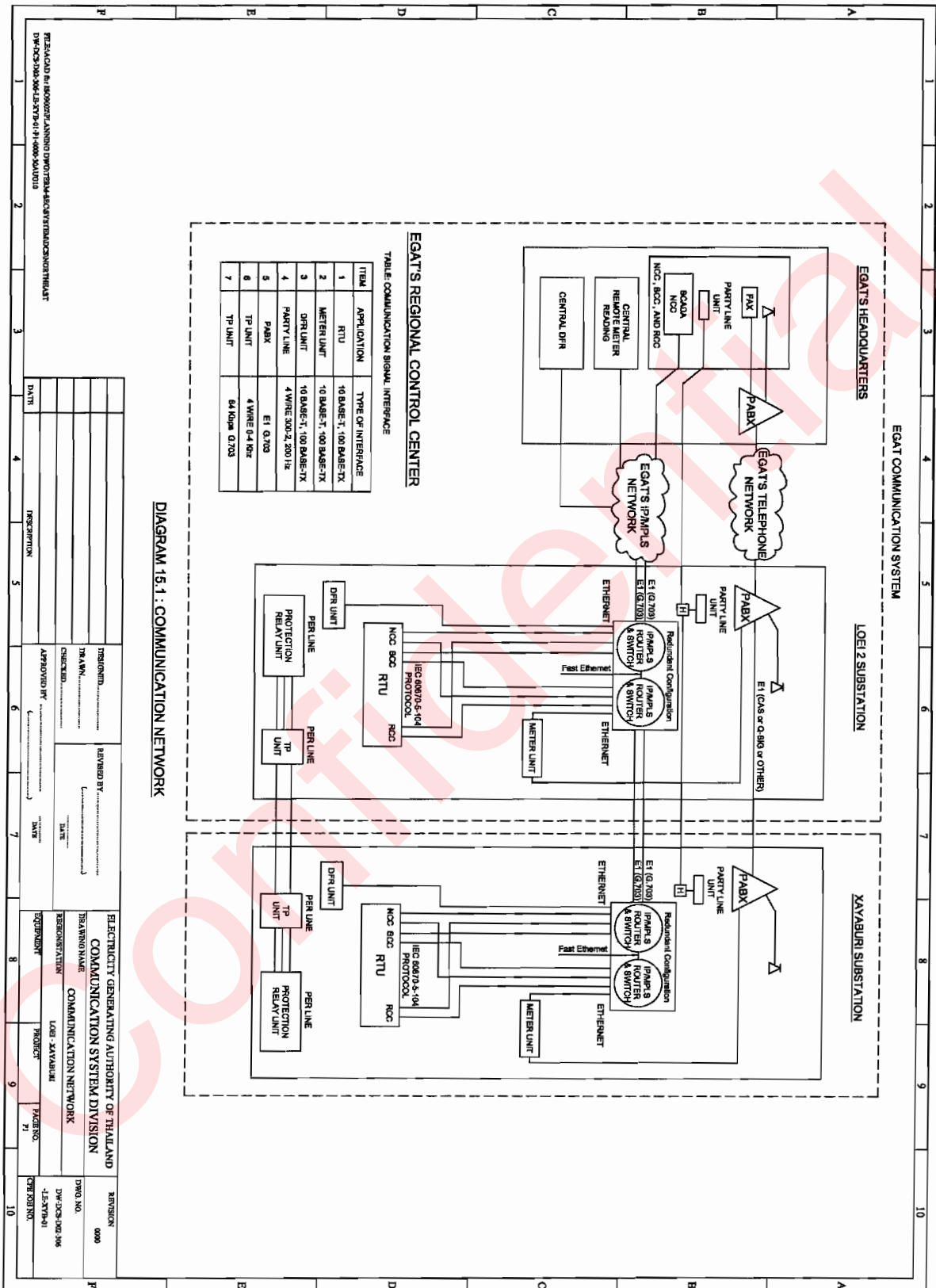
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**TABLE 15.2****Scope of Supply****(for the EGAT Communications System and the Generator Communications System)**

Item No.	Type of Equipment	EGAT System	XYB System
1	Optical fiber cable - OPGW cable and accessories - Optical repeater station and accessories - Buried cable	1 lot - 1 lot	3 lots 2 lots 3 lots
2	Optical fiber terminal equipment - SDH (1+1) multiplexer, two sets of primary multiplexer and accessories - SDH regenerator and accessories	1 lot -	1 lot 2 lots
3	Power line carrier electronics equipment - Dual channel PLC	2 sets	2 sets
4	Teleprotection signaling equipment	8 sets	8 sets
5	Line trap and coupling equipment for PLC	1 lot	1 lot
6	PABX and accessories	1 lot	1 lot
7	Multiservice switch (IP/MPLS router and LAN switch)	2 sets	2 sets
8	Main distribution frame	1 lot	1 lot
9	48 VDC Power supply system	1 lot	1 lot

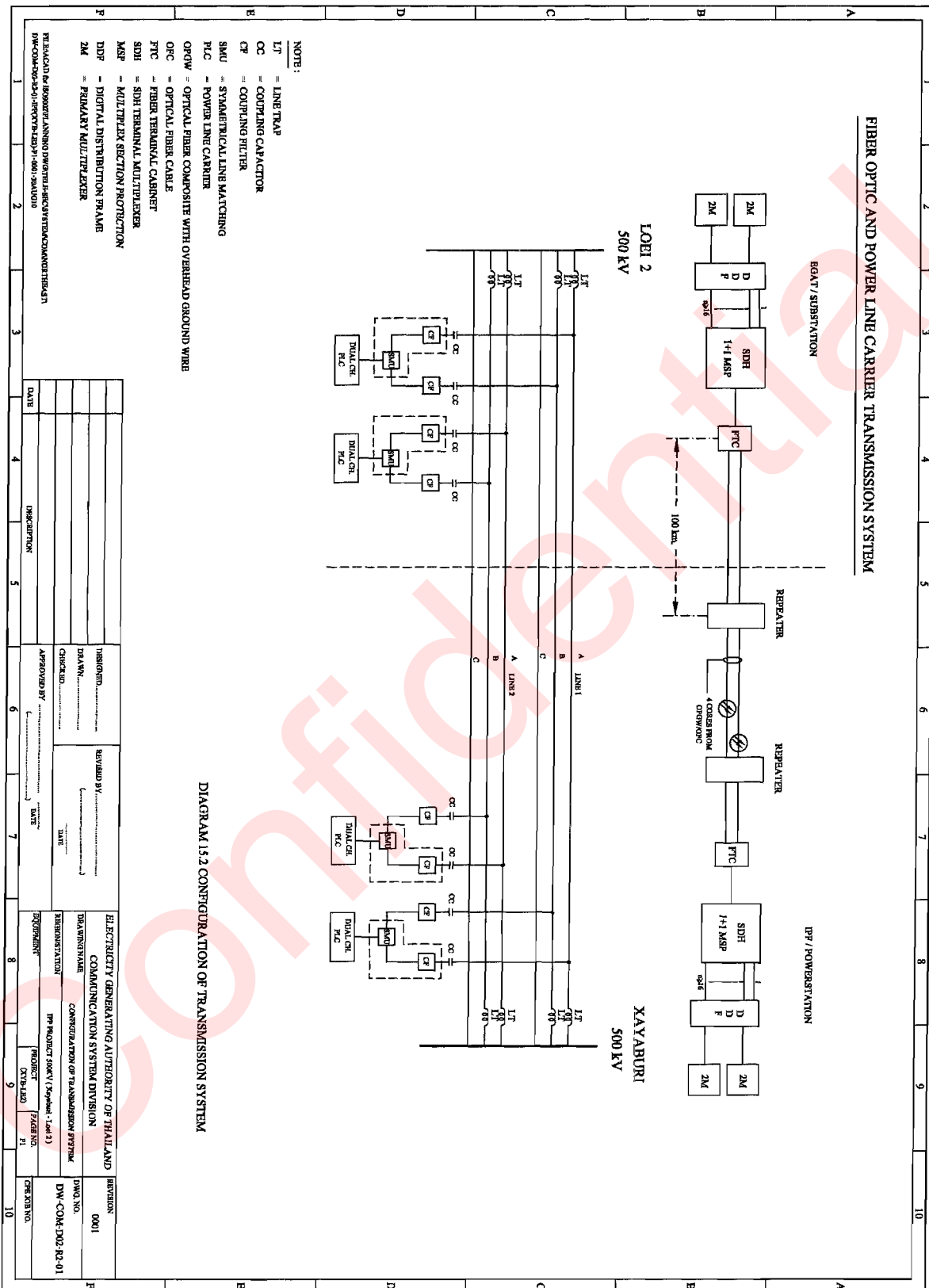
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**Schedule 16****PROTECTIVE SYSTEM**

Schedule 16 sets out the main requirements of the “**Protective System** and Fault Recording System”, which comprises various protective relaying schemes that protect the transmission system between the Facility and the main grid of the EGAT System and Fault Recording System which record the transmission system data for analyzing the system.

**1 Protective Relaying for the Transmission Line and Related Protective Schemes****1.1 Protective Relaying for the Transmission Line**

Each transmission circuit of the Transmission Line shall be protected by two (2) primary pilot relaying systems, each of which being backed up by a back-up relaying system. Such primary pilot relaying systems and back-up relaying systems shall protect the Transmission Line against all combination of phase faults and ground faults. The teleprotection signaling equipment for each transmission circuit of the Transmission Line from the Xayaburi Switchyard to the Loei 2 Substation shall be provided by the Generator and approved by EGAT. The two primary pilot relaying systems are described as follows:

**1.1.1 Primary Pilot Relaying System 1 (LP1)**

The primary pilot relaying system 1 shall be a line current differential protection scheme based on phase segregation measurements and equipped with 64 kbps ITU-T G.703 4 wire interface.

The communication link for primary pilot relaying system 1 shall be optical fibre cable.

The primary pilot relaying system 1 shall initiate single-pole and three-pole tripping and reclosing protection scheme upon fault clearing. The three-pole reclosure shall be done through a synchro-check relay.

Each relay line terminal shall be equipped with a full scheme type distance relay for backup protection, which consists of first, second and third zones of distance elements and two (2) separate timers to provide time-delayed trip for zone 2 and zone 3. All distance elements shall be independently configured so that they function properly during the loss of the communication signal.

The primary pilot relaying system 1 shall be furnished with event record and fault record function.

Each current differential relay shall be of the numerical type.

**1.1.2 Primary Pilot Relaying System 2 (LP2)**

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The primary pilot relaying system 2 shall comprise:

- a distance protection scheme based on Permissive Overreach Transfer Trip function; and
- a directional ground over current protection scheme based on Permissive Overreach Transfer Trip function.

The communication link for primary pilot relaying system 2 shall be optical fibre cable and power line carrier.

The distance protection scheme of such primary pilot relaying system 2 shall be furnished with an out-of-step blocking relay to block the operation of the distance relays in the event a power swing condition occurs.

The primary pilot relaying system 2 shall initiate single-pole and three-pole tripping and reclosing protection scheme upon fault clearing. The three-pole reclosure shall be done through a synchro-check relay.

The primary pilot relaying system 2 shall be furnished with a line fault locator, event record and fault record function.

Each distance relay shall be of the numerical type.

#### 1.1.3 Automatic Reclosing Scheme

Each automatic reclosing relay shall be single shot, single-pole and three-pole reclosure. Each relay shall be provided for use with single-pole and three-pole tripping and reclosing scheme. Each relay shall be provided with one high-speed, single shot and single-pole reclosure. For three-pole reclosure, the reclosing relay shall be done through a synchro-check relay. Each reclosing operation shall be initiated by contacts of the primary pilot relay.

The operational time settings for single-pole and three-pole reclosure shall be separately adjustable. The dead time setting range shall be between 0.3 to 15 seconds and the reclaim time setting range shall be between 1 to 30 seconds for both single-pole and three-pole operation.

### 1.2 Bus Protection for Xayaburi Switchyard and Loei 2 Substation

There shall be two (2) sets of bus protection which are one (1) set of the numerical low impedance type and one (1) set of the numerical high impedance type. A separate auxiliary tripping and lockout relay shall be provided for each bus protection.

### 1.3 Breaker Failure Protection

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The necessary relays shall be provided so that when a power circuit breaker fails to trip within the specified time, the trip circuit of all the appropriate circuit breakers the tripping of which is required in order to isolate the faulted line shall be energized to trip and lockout. Lockout relays shall be provided to prevent reclosure, either manual or automatic, until such lockout relays are reset. Such breaker failure shall be monitored and detected by instantaneous overcurrent relays in conjunction with timing relays. Direct transfer trip scheme shall also be provided to send the signal to trip instantaneously the remote end relays of the line associated with the faulted circuit breaker.

#### **1.4 Direct Transfer Tripping System**

Direct transfer tripping systems shall be applied for the following protection:

- (a) Breaker Failure Protection;
- (b) Line Terminal Overvoltage Protection;
- (c) Circuit Breaker Open Protection.

## **2. Fault Recording System**

The fault recording system (FRS) shall be a microprocessor-based instrument designed for sensing, acquiring, storing and recording critical high speed data during power system faults and disturbances. The FRS shall be tested to comply with the international standards of the IEC and IEEE/ANSI and shall be standard version.

The data transmission between the FRS and EGAT's Master Station Unit shall be performed.

### **2.1 Fault Recorder.**

Each analog channel shall be completely supplied with input signal conditioning with the frequency response of DC to 2,000 Hz. The sampling shall be adjustable at both fast and slow scan rates in order to capture both faults and slow disturbances. The pre-fault recording interval shall be selectable over the range of 50 to 1,000 milliseconds for High Scan and 10-600 seconds for Slow Scan. The resolution of A/D conversion shall be at least 12 bits.

The communication methods shall be direct connect communication and Ethernet communication by TCP/IP protocol

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The starting sensors shall be as least Overcurrent Starting Sensors, Under/Overvoltage Starting Sensor, Frequency Starting Sensor, Negative Sequence Voltage Starting Sensor, Zero Sequence Voltage Starting Sensor and Power Swing Starting Sensor. An external voltage input shall be provided for the fault recorder to connect with an external start signal.

The fault recorder shall be supplied with built-in calendar and clock to provide accurate date and time including month, day, year (or day, month, year) hour, minute, second, and millisecond for each operation of the recorder. The linked fault recorder shall be time-coordinated to EGAT's within one millisecond.

The FRS shall be provided with the following time synchronizing features:

- Synchronizing the fault recording system clock with an external clock (using the external clock from GPS System).
- Any clock utilizing the AC power supply as a time base shall transfer to crystal oscillator control in case of loss of AC power and shall transfer back to the AC power supply as a time base in case of return of AC power.
- IRIG-B synchronizing shall be provided to permit synchronizing the fault recorders with the remote station.
- The synchronizing input and output for any external clock shall be approved by EGAT to ensure proper interfacing.

The following data shall be printed on the record:

- Station Identification up to 32 alphanumeric characters
- Day, Month, Year, Hour, Minute, Second and Millisecond
- Sampling Rate
- Time Marker
- Operation Number
- All Analog, Event Channel Waveform, Sensor Operation, Time Mark
- Channel Identification
- Channel Zero Deflection Line
- Autoranging Scale Factor
- Summary of computed data, for instance, fault duration, relay time, breaker time, a percentage of voltage dip, fault current, distance to fault, etc.

## 2.2 Software

The master station software package (i.e. Data-Analysis, communication software) shall be designed for multi-tasking operation, preferably using Microsoft's Windows XP, 2003 Windows Server 2008 or the latest version which supports Thai edition to allow multifunction to run simultaneously. The master station software shall be menu-driven and user-friendly with the following minimum features:

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- 2.2.1 It shall be capable of automatic or manual selection by user, retrieving fault data upon detection of fault or disturbance conditions at any of EGAT's remote fault recorder sites over TCP/IP
- 2.2.2 All selected parts of a fault record can be transmitted. Transmission of a record can be interrupted by the operator at any time. Record shall be transmitted by time slice; therefore, the entire record to that point in time will be transmitted equally. Transmission of a fault record can continue at the point of communication error. This data shall be added to the earlier transmitted data and analysis can now be performed on the entire record.
- 2.2.3 "Automatically Poll" or "Received Calls" from EGAT's sites for any change of status including diagnosed problems or data. The interval time of Automatically Poll shall not exceed 30 minutes.
- 2.2.4 Communication link shall be able to read, down-load, and up-load all operating parameters of any of EGAT's remote fault recorder sites. If any communication error occurs during up-loading and down-loading parameters, EGAT's master station and the FRS shall roll back to use the old parameters so as to prevent improper operation.
- 2.2.5 A fault record shall be saved into a single file or single folder in the hard disk of EGAT's master station. A large number of fault records shall not reduce operating speed or cause malfunction of EGAT's master station.
- 2.2.6 Simple backup or restored backup record data with OS command. (Windows).
- 2.2.7 It shall be able to perform File-sharing function on LAN system.
- 2.2.8 The application software shall include the following features as a minimum:
- There shall be at least two (2) levels of sorting record data, i.e. by record name and by record date, and shall be able to open or display many records at the same time (multi-records).
  - It shall be able to select amplitude, time bases and waveform placement. It shall be able to place on any position and to place multiple waveforms on the same axis. Moreover, it shall be able to insert or delete any waveform (analog and digital) on a current screen.

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- For the same bus voltage, it shall be able to display each phase voltage waveform with the same scale factor.
- For the same line current, it shall be able to display each phase current waveform with the same scale factor.
- All waveforms which are shown on the screen and on the print preview shall be exactly the same.
- It shall be able to capture a selection of screen area (screen capture) and paste it in MS Office.
- It shall be able to calculate RMS value and time interval of the waveform in each cycle or in the specified range of time.
- It shall be able to print the selected waveforms on one single page without any empty page.
- For the remote data at the master station, the polling period shall be continuously selectable over 1 minute to 48 hours (at least).
- It shall be able to make up a composite record of analog traces and event traces from any different fault recorders in any desired combination. Such composite record shall be able to be saved as a new file.
- It shall be able to automatically convert waveform record data files which are collected in a hard disk of the master station to both of the binary and ASCII formats of standard IEEE COMTRADE files (at least version IEEE C37.111 – 1999). The exported COMTRADE files must have data units specified in COMTRADE 1999 format and the data shown in actual corresponding units.
- The Auto-exporting COMTRADE files shall be saved in a specified directory.
- It is able to arrange Authorization Setting in the directory of output COMTRADE files so that AFA Application Server can process on Data Acquisition procedures through EGAT LAN.
- The COMTRADE files performed on Auto-export mode shall be named and renamed by user.
- The channel identification shall consist of at least 16 digits.
- Graphic display for all analog and event channels shall include channel identification, engineering unit, scaling, date and time with resolution of one millisecond.

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- It shall be able to accurately calculate RMS voltage and current, peak voltage and current, sequence voltages and currents, phase angle, active and reactive powers, apparent impedance, frequency, and distance to fault.
- It shall be able to show six (6) vectors of voltage and current in the same diagram in order to monitor power-flow condition.
- The calculated channels function which has already been created and saved shall be available whenever a record is displayed.
- It shall be able to provide impedance plot on R – X diagram from selected analog channels.
- For the Distance to Fault Calculation of any feeder, it shall require only three (3) voltage channels (Va, Vb, Vc, either bus voltage or line voltage) and three (3) current channels of the faulted feeder (Ia, Ib, Ic) without requirement on the neutral voltage and current channels.
- It shall be able to provide calculated channels which a user can make a basic formula like summation or difference as well as be able to save, retrieve, print, display, or export.
- It shall be able to accurately measure and display on the screen the instantaneous time and the magnitude values at the location of the cursor at any point on the trace waveform.
- Time base expansion or compression shall be provided for graphic display.
- Harmonic analysis (up to 19<sup>th</sup> harmonic) using FFT of a selected trace waveform shall be provided.

## 2.3 Channel Assignment

2.3.1 Analog inputs for the FRS shall be at least as follows;

- All phase voltages of every buses in the Xayaburi Switchyard.
- All phase currents and all phase voltages of the Transmission Line from the Xayaburi Power Plant to the Loei 2 Substation.
- All phase currents of the Line Shunt Reactors.
- All phase currents of primary side, secondary side and tertiary winding of all power transformers installed at Xayaburi Substation.

2.3.2 Digital inputs for the FRS shall be at least as follows;

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- All trip contacts from line protection of transmission circuit of the Transmission Line from the Loei 2 Substation to the Xayaburi Switchyard, Line Shunt Reactor protection, bus protection, Power Transformer protection and breaker failure protection.
- All operated contact of reclosing relay of transmission circuit of the Transmission Line from the the Loei 2 Substation to the Xayaburi Switchyard.
- All contacts of signal receive and signal transmit of all communication channels.
- Status of all breakers in the Xayaburi Switchyard.
- All Protection Signals of Bay Generator and Bay Reserve Transformer at the Power Plant.
- All trip contacts of Generator, Generator Transformer and Reserve Transformer (86K, 86X) at the Power Plant.
- All status of breaker of Generator Transformer and Reserve Transformer at the Power Plant.

### 3. **Equipment Compatibility**

Generator shall ensure that the primary pilot relaying system 1 (LP1) of the Generator Protective System shall be the same type as that of the primary pilot relaying system 1 (LP1) of the EGAT Protective System, as provided in Section 2.9.2.

Each protective relaying scheme comprised in the Protective System shall be utility grade internationally recognized product.

The protective relays installed at the Xayaburi Switchyard that interface with the protective relays at the Loei 2 Substation shall be of the type/model that is specified in "EGAT Accepted Relay List No. 1".

The FRS installed at the Xayaburi Switchyard shall be of the type/model that is specified in "EGAT Accepted FRS List".

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**Schedule 17****TESTING AND COMMISSIONING****Part I: Preamble****1 Commissioning Phases**

The time period during which all the Commissioning Testing of all the EGAT Subsystems and the Generator Subsystems is to be conducted shall be broken down into 3 main phases as defined in Section 2.10.1(d):

- Pre-Connection Commissioning Phase
- Pre-Energization Commissioning Phase
- Post-Energization Commissioning Phase

**2 Classification of tests**

Any given test associated with the Commissioning Testing shall be characterized as either an Acceptance Test, an Information Test or a Completion Test as defined in Section 2.10.2(a).

**3 List of Subsystems**

For the purpose of Commissioning Testing, the EGAT Subsystems and the Generator Subsystems shall be as listed in Sections 2.10.1(a) and 2.10.1(b), respectively.

**4 Prerequisites for performance of the tests**

Tests listed in Part II of this Schedule 17 shall be carried out on a combination of Subsystems, a Subsystem or a given independent component of a Subsystem for which its or their erection and/or installation has been completed. Within the period during which each such test is conducted, there shall be no further erection or installation work required on such relevant combination of Subsystems, Subsystem or component except for either:

- (i) any modification or correction that may be necessary as a result of the Commissioning Testing; or
- (ii) minor work which has no material impact on the respective Commissioning Procedure (including, without limitation, final painting, labeling...).

**5 Factory Acceptance Test (FAT)**

Any test listed in Part II of this Schedule 17 may, to the extent of feasibility and at the discretion of the responsible Party, be carried out as either a FAT or on site.

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Where any such test has been carried out as a FAT, the responsible Party shall provide the other with certified copies of the corresponding FAT report. Any test, calibration, or adjustment that has been carried out as part of a FAT shall not be repeated as part of the Commissioning Testing unless there is reasonable evidence indicating that such FAT report is either invalid or not applicable for the equipment actually delivered and installed.

## **6 Type Tests**

A Type Test certificate is a document attesting that:

- (i) an identified product design complies with the requirements of a specific standard;
- (ii) the tested equipment has fulfilled the requirements of the said standard; and
- (iii) the relevant ratings assigned by the manufacturer comply with that standard.

A Type Test certificate is applicable only to the equipment tested. The testing laboratory is responsible for and attests to the validity and the contents of such Type Test certificate. The manufacturer is responsible for and attests to the conformity of any apparatus having the same designation as the one tested.

Any test listed in Part II of this Schedule 17, or part thereof where such test can be subdivided into parts, which pertains to the verification of the design or characteristics of equipment for which such design or characteristics are attested by reference to a Type Test certificate shall not be repeated as part of the Commissioning Testing unless there is reasonable evidence indicating that such actually delivered and installed equipment is not in conformity with the relevant Type Test certificate.

Either Party shall provide the other with copies of the Type Test certificates for equipment for which the design or characteristics shall be attested by reference to a Type Test certificate.

## **7 Other Tests**

Either Party may, for its own purposes and requirements, perform tests which are not listed in Part II of this Schedule 17 on any Subsystem, combination of Subsystems, or component of a Subsystem for which it is responsible. To the extent that such test may either affect or require the cooperation of the other Party, the Parties shall discuss and coordinate the scheduling of any such test in accordance with Paragraph 8 of Part I of this Schedule 17.

## **8 Scheduling and coordination of test**

The Parties shall abide by the applicable provisions of Section 2.10.3 regarding the scheduling of any test.

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**9 Non waiver of party's responsibility**

Both Parties agree that:

- (i) the execution of a test and/or the performance of an inspection by the responsible Party; and/or
- (ii) the attendance and witnessing of any such test and/or inspection by the non responsible Party; and/or
- (iii) the acceptance by the non responsible Party of any Certificate issued by the responsible Party pursuant to Section 2.10.4,

shall not release the responsible Party from any of its obligations under the Agreement.

**10 Attendance at tests**

Either Party or their designated representatives shall be entitled to designate any third party to accompany and assist them for the purpose of attending and witnessing any test and/or inspection, provided that:

- (i) the other Party is informed of and consents to the accompaniment of such third party, which consent not to be unreasonably withheld;
- (ii) such attendance by a third party shall not impede the normal progress of the relevant test and/or inspection; and
- (iii) the Party that requests the accompaniment of such third party shall bear all costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and lodging expenses.

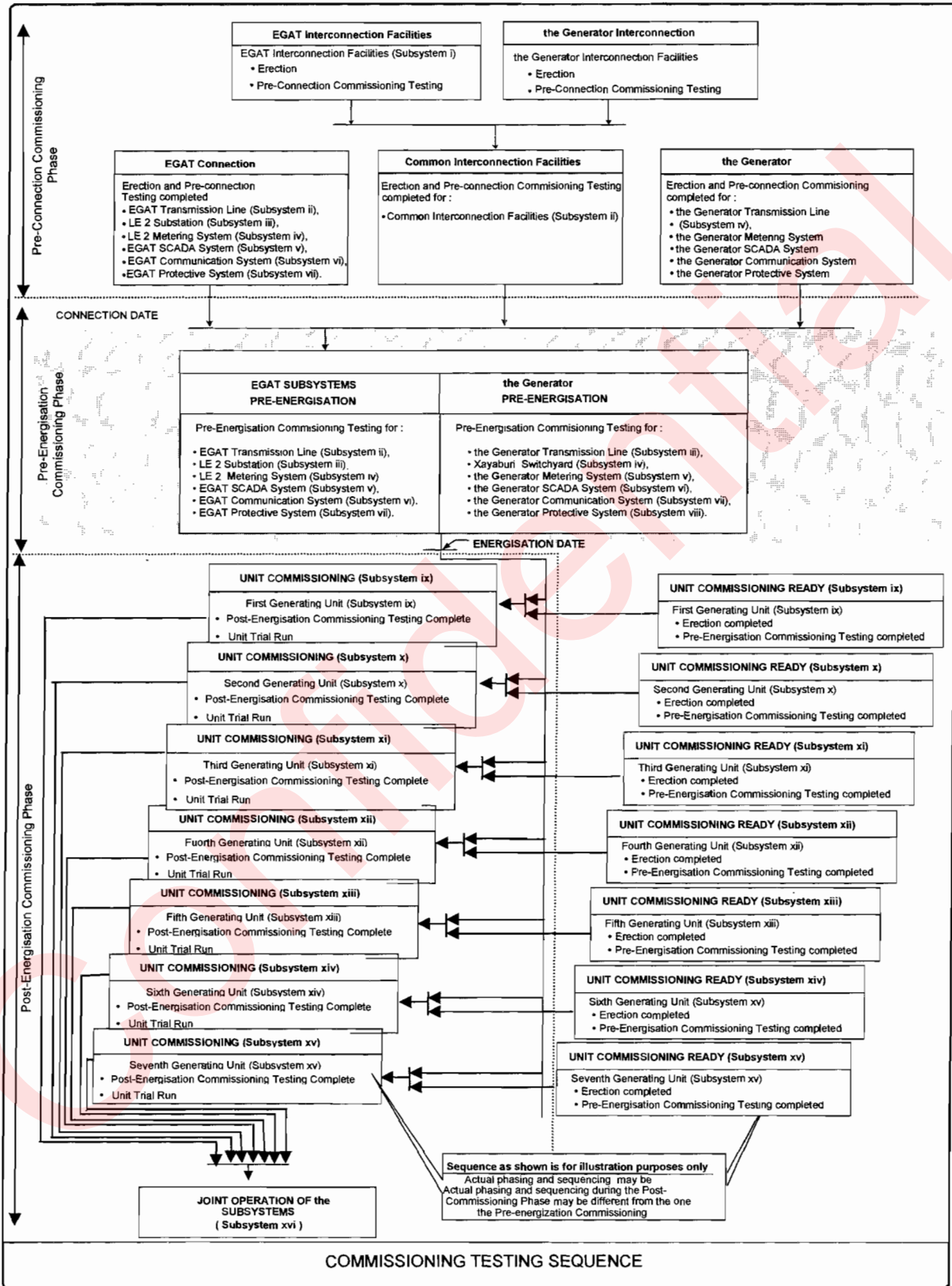
The Parties specifically agree that the Generator may, for any test or inspection, be accompanied and assisted by the EPC Contractor and/or any subcontractors, and the O&M Contractor.

**11 Typical duration of the tests**

The typical duration provided for some of the tests listed in Part II of this Schedule 17 shall not be construed as actually or potentially modifying the Milestone Dates. Such information is only intended to be used by the Parties as a basis to assess the relevant organization and anticipation to meet the Milestone Dates associated with the Commissioning Testing.

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12 Synoptic view of Commissioning Testing



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**Part II: List of Acceptance Tests, Information Tests and Completion Tests**

Part II of this Schedule 17 sets out the lists of tests associated with the Commissioning Testing for:

- (i) each of the EGAT Subsystems and the Generator Subsystems; and
- (ii) each of the Commissioning Phase.

This Part II of the Schedule 17 shall be construed as follows:

- (i) subject to Section 2.10.2(a) and Part I of this Schedule 17, the tests within each of the Commissioning Phases as contained herein shall, except for such test pertaining to the Post-Energization Commissioning Phase which may have been waived by either Party pursuant Section 2.10.4(i), be such tests that are required to be successfully performed for the issuance and acceptance of the respective Certificate for such Subsystem and Commissioning Phase.
- (ii) the order of the tests shall have no particular significance and the actual sequence of such tests as performed for the purpose of Commissioning Testing shall not be required to be consistent with such order; and
- (iii) subject to any relevant technical requirement, a particular test that is listed herein as associated with a given Commissioning Phase may be performed during an earlier Commissioning Phase.

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**1 Tests in respect of the EGAT Transmission Facilities****1.1 EGAT Subsystem (i): EGAT Interconnection Facilities****1.1.1 Pre-Connection Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Erection conformity checking	X			
Tower earthing resistance measurement		X		

**1.1.2 Pre-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

**1.1.3 Post-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

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**1.2 EGAT Subsystem (ii): EGAT Transmission Line****1.2.1 Pre-Connection Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Erection conformity checking	X			
Tower footing resistance measurement		X		
OPGW test (LE2-EIF section)			X	
Phase reference check			X	
Verification of line parameters (R and X) for transmission circuits 1 and 2	X			

**1.2.2 Pre-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Transmission circuit 1-Overall phase reference check (From LE2 to XYB Switchyard)	X			
Energization of transmission circuit 1	X			
Transmission circuit 2-Overall phase reference check (from LE2 to XYB Switchyard)	X			
Energization of transmission circuit 2	X			

**1.2.3 Post-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

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### 1.3 EGAT Subsystem (iii): LOEI 2 Substation

#### 1.3.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Wiring conformity and dielectric tests of auxiliary circuits			X	
Wiring conformity and site tests of current transformers (common with Metering System)	X			
Wiring conformity and site tests of voltage transformers (common with Metering System)	X			
Switchgear conformity		X		
Control system test		X		
AC voltage withstand tests	X			

#### 1.3.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Transmission circuit 1 energization from Loei 2 Substation to Xayaburi Switchyard	X			
Transmission circuit 2 energization from Loei 2 Substation to Xayaburi Switchyard	X			
To be completed together with Commissioning Procedures if applicable				

#### 1.3.3 Post-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
To be completed together with Commissioning Procedures if applicable				

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#### 1.4 EGAT Subsystem (iv): Loei 2 Metering System

##### 1.4.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Overall wiring conformity			X	
Wiring conformity (connection to energy meters) and site tests of current transformers	X			3
Wiring conformity (connection to energy meters) and site tests of voltage transformers	X			3

##### 1.4.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Verification and Accuracy Tests of all meters: <ul style="list-style-type: none"> <li>• 100% load and power factor 1.0</li> <li>• 50% load and power factor 1.0</li> <li>• 10% load and power factor 1.0</li> <li>• 100% load and power factor 0.5</li> <li>• 50% load and power factor 0.5</li> </ul>	X			2
Check of data exchange between Loei 2 Metering System and the Generator System	X			1

##### 1.4.3 Post-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Check consistency of data logging between EGAT and the Generator System	X			1
To be completed together with Commissioning Procedures if applicable				

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## 1.5 EGAT Subsystem (v): EGAT SCADA System

### 1.5.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Preparation of for data exchange and logging between the EGAT Control Centers and the Generator SCADA System			X	
To be completed together with the Commissioning Procedures if applicable.			X	

### 1.5.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Tests of communication protocol: <ul style="list-style-type: none"> <li>• check correct transmission of each type of message</li> <li>• check correct transmission between EGAT Control Centers and the Generator Gateway or RTU, as applicable</li> </ul>	X			
Database exchange tests: <ul style="list-style-type: none"> <li>• Check exchange of each individual data as listed in Part I of Schedule 15</li> </ul>	X			

### 1.5.3 Post-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Check consistency of actual data exchange and logging between the EGAT Control Centers and the Generator SCADA System	X			
To be completed together with the Commissioning Procedures if applicable.				

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**1.6 EGAT Subsystem (vi): EGAT Communication System****1.6.1 Pre-Connection Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Erection and wiring conformity checks			X	
Test of optical fiber and multiplexer			X	
Test of digital primary multiplexers			X	
PABXs tests.			X	

**1.6.2 Pre-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Optical link test (Loei 2 - Xayaburi Switchyard)	X			7
PLC link test and tuning (Loei 2 - Xayaburi Switchyard)	X			7
Teleprotection equipment test between Loei 2 Substation - Xayaburi Switchyard	X			7
Data, teleprotection, telemetry and telephone channels tests between Loei 2 Substation - Xayaburi Switchyard	X			7

**1.6.3 Post-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

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**1.7 EGAT Subsystem (vii): EGAT Protective System****1.7.1 Pre-Connection Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Protective System tests (set)	X			30
Secondary injection test on protective relays at service settings	X			
External & internal cable and wiring inspections	X			
Protective relays functional tests	X			
Verification of transmission circuit 1 differential protections: phase to phase comparison	X			
Verification of transmission circuit 1 distance protections and directional relays	X			
Verification of transmission circuit 2 differential protections: phase to phase comparison	X			
Verification of transmission circuit 2 distance protections and directional relays	X			

**1.7.2 Pre-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Verification of transmission circuit 1 differential protections: phase to phase comparison	X			
Verification of transmission circuit 2 differential protections: phase to phase comparison	X			
To be completed together with Commissioning Procedures if applicable				

**1.7.3 Post-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
To be completed together with Commissioning Procedures if applicable				

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**2 Tests in respect of the Generator System****2.1 The Generator Subsystem (i): the Generator Interconnection Facilities****2.1.1 Pre-Connection Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Erection conformity checking	X			
Tower earthing resistance measurement		X		

**2.1.2 Pre-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

**2.1.3 Post-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

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**2.2 the Generator Subsystem (ii): the Generator Transmission Line****2.2.1 Pre-Connection Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Erection conformity checking	X			
Tower earthing resistance measurement		X		
OPGW test (Xayaburi Switchyard – Loei 2)			X	
Optical fiber repeater test			X	
Phase reference check			X	
Verification of line parameters (R and X) for transmission circuits 1 and 2	X			

**2.2.2 Pre-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Transmission circuit 1-overall phase reference check (from Xayaburi Switchyard to Loei 2)	X			
Energization of transmission circuit 1	X			
Transmission circuit 2-overall phase reference check (from Xayaburi Switchyard to Loei 2)	X			
Energization of transmission circuit 2	X			

**2.2.3 Post-Energization Commissioning Phase**

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

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### 2.3 the Generator Subsystem (iii): Common Interconnection Facilities

#### 2.3.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Erection conformity checking according to criteria set out in Schedule 13	X			
OPGW test			X	
Phase reference check			X	

#### 2.3.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Transmission circuit 1-overall phase reference check ( Xayaburi Switchyard to Loei 2)	X			
Energization of transmission circuit 1	X			
Transmission circuit 2-overall phase reference check ( Xayaburi Switchyard to Loei 2)	X			
Energization of transmission circuit 2	X			

#### 2.3.3 Post-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

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## 2.4 The Generator Subsystem (iv): Xayaburi Switchyard

### 2.4.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Wiring conformity and dielectric tests of auxiliary circuits			X	
Wiring conformity and site tests of current transformers (common with Metering System)	X			
Wiring conformity and site tests of voltage transformers (common with Metering System)	X			
Switchgear conformity		X		
Control system test		X		
AC voltage withstand tests	X			

### 2.4.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Back energization from Loei 2 Substation by transmission circuit 1	X			
Back energization from Loei 2 Substation by transmission circuit 2	X			

### 2.4.3 Post-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
To be completed together with Commissioning Procedures if applicable				

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## 2.5 The Generator Subsystem (v): the Generator Metering System

### 2.5.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Overall wiring conformity			X	
Wiring conformity (connection to energy meters) and site tests of current transformers	X			
Wiring conformity (connection to energy meters) and site tests of voltage transformers	X			

### 2.5.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Verification and Accuracy Tests of all meters: <ul style="list-style-type: none"> <li>• 100% load and power factor 1.0</li> <li>• 50% load and power factor 1.0</li> <li>• 10% load and power factor 1.0</li> <li>• 100% load and power factor 0.5</li> <li>• 50% load and power factor 0.5</li> </ul>	X			2
Check of data exchange between the Generator Metering System and EGAT Transmission Facilities	X			

### 2.5.3 Post-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Check consistency of data logging between the Generator System and EGAT Transmission Facilities	X			
To be completed together with Commissioning Procedures, if applicable				

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## 2.6 The Generator Subsystem (vi): the Generator SCADA System

### 2.6.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Preliminary tests: transmission of data between the Generator SCADA System and the Generator Communication System			X	

### 2.6.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Tests of communication protocol: <ul style="list-style-type: none"> <li>• check transmission of each type of message</li> <li>• check transmission between the Generator Gateway or RTU, as applicable, and the EGAT Control Centers</li> </ul>	X			
Database exchange tests: <ul style="list-style-type: none"> <li>• Check exchange of each individual data as listed in Part I of Schedule 15</li> </ul>	X			

### 2.6.3 Post-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
To be completed together with Commissioning Procedures, if applicable				

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## 2.7 The Generator Subsystem (vii): the Generator Communication System

### 2.7.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Erection and wiring conformity checks			X	
Test of optical fiber and multiplexer			X	
Test of digital primary multiplexers			X	
PABXs and associated pager system tests.			X	

### 2.7.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Optical link test ( Xayaburi Switchyard – Loei 2)	X			
PLC link test and tuning (Xayaburi Switchyard – Loei 2)	X			
Optical fiber repeater test		X		
Teleprotection equipment test between – Xayaburi Switchyard – Loei 2	X			
Data, teleprotection, telemetering and telephone channels tests between – Xayaburi Switchyard – Loei 2	X			

### 2.7.3 Post-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

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## 2.8 The Generator Subsystem (viii): the Generator Protective System

### 2.8.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Protective System tests (set)	X			30
Verification of transmission circuit 1 differential protections: phase to phase comparison	X			
Verification of transmission circuit 1 distance protections and directional relays	X			
Verification of transmission circuit 2 differential protections: phase to phase comparison	X			
Verification of transmission circuit 2 distance protections and directional relays	X			

### 2.8.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Verification of transmission circuit 1 differential protections: phase to phase comparison	X			
Verification of transmission circuit 2 differential protections: phase to phase comparison	X			
To be completed together with Commissioning Procedures				

### 2.8.3 Post-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Test of inter tripping	X			
To be completed together with Commissioning Procedures				

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## 2.9 The Generator Subsystem (ix) to (xv): Generating Units

### 2.9.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

### 2.9.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Verification and calibration of all protections and protective relays	X			
Initial spinning test by manual start			X	
Balance, vibration and other mechanical tests		X		
Over speed test		X		
General inspection			X	
Generator insulation test		X		
Governor test / adjustment for speed no load operation		X		
Excitation system verification and preliminary tests		X		
Short circuit characteristics test	X			
Voltage regulator / adjustment for no load operation		X		
Open circuit test	X			
Phase sequence test		X		
Residual voltage		X		
Voltage waveform	X			
Start and stop functions including emergency stop	X			
the Generator Stability Data	X			
Synchronization test	X			
Unit Metering System check and Accuracy Tests	X			
Water Measuring System checks (with First Generating Unit only)	X			

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2.9.3 Post-Energization Commissioning Phase

In the following table the Tests which are compulsory for the issuance of the relevant Acceptance Certificate are identified in the column “**Compulsory**”.

Test item	Acceptance	Information	Compulsory	Typical duration (days)
Unit Metering System check and Accuracy Tests	X			
Initial load test by taking up load in predefined steps up to full load		X		
Load increasing/decreasing test (MW/minute) (Unit Loading/DeLoading Rates)	X			
Registered XYB Unit Minimum Capacity stability test	X			
Unit Primary Response	X			
Active load rejection test (25%, 50%, 75%, 100% load)		X	X	
Voltage regulator / adjustment for load operation		X	X	
Speed Governor adjustment of parameters (governor droop)	X		x	
Power system stabilizer test	X			
Heat run test at nominal load		X	X	
Modes of operation	X		x	
Transmission circuit 1 energization from the Facility, according to the procedures in Part IV of Schedule 1	X			
Transmission circuit 2 energization from the Facility, according to the procedures in Part IV of Schedule 1	X			
Generator reactive capability test	X			
Registered XYB Unit N Capacity Test	X			
Unit Trial Run Continuous Operation Test	X			
Unit Trial Run Start and Stop Test	X			
Automatic Generation Voltage Control (AGVC) test	X			

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## 2.10 The Generator Subsystem (xvi): Joint operation of all the Generator Subsystems

### 2.10.1 Pre-Connection Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

### 2.10.2 Pre-Energization Commissioning Phase

Test item	Acceptance	Information	Completion	Typical duration (days)
Not applicable				

### 2.10.3 Post-Energization Commissioning Phase

In the following table the Tests which are compulsory for the issuance of the relevant Acceptance Certificate are identified in the column “**Compulsory**”.

Test item	Acceptance	Information	Compulsory	Typical duration (days)
Unit Loading/Deloading Rates	X			
Active load rejection test (25%, 50%, 75%, 100% load)		X	X	
VAR sharing		X		
PSS Test	X			
Predefined operating point within operating areas	X		X	
Registered Capacity Test for each selected combination of Generating Units	X			
Transmission Loss method consistency check	X			
Global Trial Run Test	X			

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### **Part III: Test Procedures and Standards for Acceptance Tests**

#### **1 Scope and content of Testing/Commissioning Procedures**

Commissioning Procedures shall be elaborated according to the principles stated in Section 2.10.2. In addition to the particular requirements set out in this paragraph, the Commissioning Procedures shall address, without limitation, the following items:

- purpose and scope of test
- methodology for testing and measuring, instrumentation
- methodology for evaluation of test results
- test conditions
- precision and tolerance
- the acceptance criteria
- applicable standards
- safety issues
- other aspects specific and relevant to the test

For a given test, when the Grid Code is not applicable and no standard exists, the Commissioning Procedures shall define all details related to the above mentioned topics based on Prudent Utility Practice.

#### **2 Codes and Standards for Testing and Commissioning**

##### **2.1 Sources for codes and standards**

Other than explicitly agreed by the Parties, codes or standards to be applied for testing purposes shall be those issued by one of the following organizations:

- IEC International Electrotechnical Commission
- ISO International Organization for Standardization
- EN Euronorms
- AFNOR Association Française de Normalisation
- ANSI American National Standards Institute
- ASTM American Society for Testing of Material
- IEE Institute of Electrical Engineer
- IEEE Institute of Electrical and Electronic Engineers
- ASME American Society of Mechanical Engineers
- ITU-T International Telecommunications Union-Telecommunication

##### **2.2 Homogeneity of codes and standards**

Whenever the scope of a test is covered by a standard, the corresponding Commissioning Procedure shall be based on such standard.

Where several standards are applicable to a given test, a single standard shall be used for such test and all identical tests.

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### 2.3 System of units

The international metric system (SI) shall be used throughout for all measurements and symbols.

All standards and codes based on a non SI system of units shall be completed by indications in the SI system of units. The latter shall govern the interpretation of such documents.

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### Part IV: Specific Test Requirements

The test requirements provided in this Part IV shall apply to:

- (i) the respective testing carried out during the Commissioning Testing; and
- (ii) any same or similar testing carried out as part of an Annual Testing or an Additional Testing.

When these test requirements are applied for the purposes of an Annual Testing or an Additional Testing, any reference to a Commissioning Procedure in this Part IV shall be understood to be a reference to the corresponding Post COD Testing Procedures.

#### 1 Unit Trial Run Test

For the purpose of issuing the Certificate of Readiness for Operation in respect of the Generator Subsystems (ix) to (xv), each respective Generating Unit shall, after completing all the other applicable Commissioning Testing required therefore in the Post-Energization Commissioning Phase, be required to successfully complete the “**Unit Trial Run Test**”, which shall consist of:

- (i) first the Continuous Operation Test; and
- (ii) second the Start and Stop Test.

##### 1.1 **Continuous Operation Test**

In order to pass the Continuous Operation Test, the relevant Generating Unit shall be required to achieve stable operation for a continuous period of seventy-two (72) hours commencing from the time as scheduled in accordance with the provisions of Section 2.10.3 (the “**Continuous Operation Test Period**”) at varying active power outputs as Dispatched by EGAT in accordance with the Agreement without any failure or interruption. EGAT shall not initiate more than three (3) Start and Stop Cycles defined in Paragraph 1.2 of Part IV of this Schedule 17 during the Continuous Operation Test Period.

In the event any failure or interruption in respect of the said continuous operation occurs during the Continuous Operation Test Period:

- (i) if such failure or interruption is either attributable to the relevant Generating Unit (including stopping such Generating Unit for modification, fine-tuning, calibration or additional adjustment) or is within the reasonable control of the Generator, the relevant Continuous Operation Test shall be considered as failed and another new Continuous Operation Test of seventy-two (72) hours shall recommence at a time as scheduled in accordance with the provisions of Section 2.10.3; or

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- (ii) if such failure or interruption is neither attributable to the relevant Generating Unit nor to EGAT but is beyond the reasonable control of the Generator, the relevant Continuous Operation Test shall be considered as suspended during such period starting from the occurrence of failure or interruption until the time both Parties agree to resume the relevant Continuous Operation Test. Upon such resumption the relevant Generating Unit shall be required to achieve stable operation for a period equal to the balance of such portion of the original Continuous Operation Test Period as existing at the time when such failure or interruption occurred; or
- (iii) if such failure or interruption is attributable to EGAT, including without limitation any interruption ordered by EGAT or condition within the reasonable control of EGAT, the period during which such failure or interruption occurs shall be considered as part of the relevant Continuous Operation Test Period.

## 1.2 Start and Stop Test

In order to pass the Start and Stop Test, the relevant Generating Unit shall be required to successfully complete any successive number of Start and Stop Cycles as initiated by EGAT within a continuous period of seventy-two (72) hours commencing from the time as scheduled in accordance with the provisions of Section 2.10.3 (the “**Start and Stop Test Period**”) without any failure in completing any of such Start and Stop Cycles, provided that such Generating Unit shall, subject to there being no prior failure in completing any Start and Stop Cycles as initiated by EGAT during such Start and Stop Test Period, be deemed to have passed the Start and Stop Test at the time that is the earlier to occur of:

- (I) the successful completion of ten (10) Start and Stop Cycles during such Start and Stop Test Period; and
- (II) the expiration of the Start and Stop Test Period.

For the purpose of such Start and Stop Test, a Start and Stop Cycle shall be defined as the period which:

- (1) starts from the time at which such relevant Generating Unit synchronizes with the EGAT System;
- (2) continues while such relevant Generating Unit increases its generation from no-load to the Unit Dispatch Level and/or decreases its generation from any level down to no-load, as the case may be, all as Dispatched by EGAT; and
- (3) ends at the time at which such relevant Generating Unit is desynchronized from the EGAT System.

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The relevant rules regarding the Start and Stop Test shall be as follows:

- (a) The number of successive Start and Stop Cycles that have been successfully completed during the Continuous Operation Test Period shall be counted for the purpose of satisfying the requirement of completing ten (10) Start and Stop Cycles referred to above, provided that such number of successive Start and Stop Cycles shall only be counted if it and other successive and successfully completed Start and Stop Cycles that occurs within the relevant Start and Stop Period shall constitute a series of ten (10) successive and successfully completed Start and Stop Cycles without any failure or interruption during the time period associated therewith.
- (b) The interval between the respective starting time of any two (2) consecutive Start and Stop Cycles shall be at least one (1) hour.
- (c) If the relevant Generating Unit fails to successfully complete any such Start and Stop Cycle during a given Start and Stop Test Period:
  - (i) if such failure or interruption is either attributable to the relevant Generating Unit (including stopping such Generating Unit for modification, fine-tuning, calibration or additional adjustment) or is within the reasonable control of the Generator, the relevant Start and Stop Test shall be considered as failed and another new Start and Stop Test in respect of a new Start and Stop Test Period of seventy two (72) hours shall restart at a time as scheduled in accordance with the provisions of Section 2.10.3; or
  - (ii) if such failure or interruption is neither attributable to the relevant Generating Unit nor to EGAT but is beyond the reasonable control of the Generator, the relevant Start and Stop Test shall be considered as suspended during such period starting from the occurrence of failure or interruption until the time both Parties agree to resume the relevant Start and Stop Test. Upon such resumption the relevant Generating Unit shall be required to continue the Start and Stop Test for a period equal to the balance of such portion of the original Start and Stop Test Period as existing at the time when such failure or interruption occurred; or
  - (iii) if such failure or interruption is attributable to EGAT, including without limitation any condition within the reasonable control of EGAT, the period during which such failure or interruption occurs shall be considered as part of the relevant Start and Stop Test Period.

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## 2 Global Trial Run Test

For the purpose of issuing and accepting the Certificate of Readiness for Operation in respect of the the Generator Subsystem (xvi), the Generator Subsystem (xvi) shall, at any time after the receipt of the respective Certificates of Readiness for Operation for all seven (7) Generating Units, be required to complete the “**Global Trial Run Test**”.

In order to pass the Global Trial Run Test, the the Generator Subsystem (xvi) shall be required to achieve stable operation for a period of four (4) hours commencing from the time as scheduled in accordance with the provisions of Section 2.10.3 (the “**Global Trial Run Test Period**”) at varying active power outputs as Dispatched by EGAT in accordance with the Agreement.

During the Global Trial Run Test, EGAT shall not initiate any Start and Stop Cycle in respect of any Generating Unit.

In the event any failure or interruption in respect of the said continuous operation occurs during the Global Trial Run Test Period:

- (i) if such failure or interruption is attributable to the Generator, the relevant Global Trial Run Test shall be considered as failed and another new Global Trial Run Test of four (4) hours shall recommence at a time as scheduled in accordance with the provisions of Section 2.10.3; or
- (ii) if such failure or interruption is attributable to EGAT, including without limitation any interruption ordered by EGAT or due to a condition within the reasonable control of EGAT, the period during which such failure or interruption occurs shall be considered as part of the relevant Global Trial Run Test Period.

## 3 Registered XYB Unit N Capacity Test in respect of each Generating Unit

### 3.1 Test conditions and configuration

Testing of the generating capacity in respect of a given Generating Unit N (the “**Registered XYB Unit N Capacity**”) shall be carried out under the following conditions:

- Line voltage: within the range as defined by mutual agreement in the relevant Commissioning Procedure.
- Frequency: within the range as defined by mutual agreement in the relevant Commissioning Procedure.
- Power factor at Xayaburi Switchyard: within the range as defined by mutual agreement in the relevant Commissioning Procedure.
- Operating Water Head: under prevailing conditions.
- Weather: fair conditions, reasonably representative of normal weather conditions and specifically avoiding extreme conditions such as lightning, storm, extreme temperatures, high wind, heavy rain, etc.
- Transmission Line: both transmission circuits operating in parallel.

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- The response of the Generating Units to frequency excursions shall be minimized by setting the governor droop of the speed governor to its maximum value and/or by any other method defined in the Commissioning Procedures.

The range of line voltage, frequency and power factor provided herein shall be defined by taking into account the effect that the variation of each such line voltage, frequency and power factor may have on the result and interpretation of the particular testing. The test shall only be considered relevant if the parameters remain within the above stated range over the entire duration of the test. The Commissioning Procedure shall include such acceptable ranges for each of the above parameters and acceptable variation rates within said ranges, within which the Registered XYB Unit N Capacity Test may proceed and the results thereof be considered relevant. Such Commissioning Procedure shall also define any adjustment or correction required in order to take into account the actual value of each of these parameters during the test.

### 3.2 Conduct of test

The maximum value and the minimum value of generating capacity that results from such Registered XYB Unit N Capacity Test in respect of a given Generating Unit N (the “**Registered XYB Unit N Maximum Capacity**” and the “**Registered XYB Unit N Minimum Capacity**”, respectively) shall each be measured at and referred to the Unit Metering Point.

The Registered XYB Unit N Minimum Capacity shall be determined using the same criteria as set out in Paragraph 7.3 of Part IV of this Schedule 17 for the Registered XYB Unit Minimum Capacity for one (1) Generating Unit in operation.

### 3.3 Interpretation and implication of test result

The Registered XYB Unit N Maximum Capacity and the Registered XYB Unit N Minimum Capacity shall each be compared with the corresponding Contracted XYB Unit Maximum Capacity and the corresponding Contracted XYB Unit Minimum Capacity as per Tables 1.2.1 and 1.2.2 of Part III of Schedule 1, as applicable, for the relevant Operating Water Head as existing at the time when such Registered XYB Unit N Capacity Test is conducted and for one Generating Unit in operation.

Without prejudice to the determination of liquidated damages in accordance with Section 9.5.8, in the event that the respective Registered XYB Unit N Maximum Capacity of a given Generating Unit N is greater than or equal to the corresponding Minimum Unit Capacity Threshold, such Generating Unit shall be deemed to have passed the relevant Registered XYB Unit N Capacity Test.

The “**Minimum Unit Capacity Threshold**” shall, in respect of a given Operating Water Head, be defined as ninety per cent (90%) of the Contracted

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XYB Unit Maximum Capacity for one (1) Generating Unit and for such Operating Water Head as set out in Tables 1.2.1 of Schedule 1.

In the event that:

- (i) the Registered XYB Unit N Maximum Capacity is less than the corresponding Contracted XYB Unit Maximum Capacity for one (1) Generating Unit, the shortfall shall be defined as the “**Unit N Tested Capacity Shortfall**” for such Generating Unit N; or
- (ii) the Registered XYB Unit N Minimum Capacity is greater than the corresponding Contracted XYB Unit Minimum Capacity for one (1) Generating Unit, the excess shall be defined as the “**Unit N Tested Capacity Excess**” for such Generating Unit N.

Such value of Unit N Tested Capacity Shortfall and Unit N Tested Capacity Excess shall, respectively, be used to rank the three (3) seven (7) Generating Units for the purposes of conducting the Registered Capacity Test and the Registered XYB Unit Minimum Capacity Test provided in Paragraphs 4 and 7 of Part IV of this Schedule 17, as applicable.

#### 4 **Registered Capacity Test**

##### 4.1 **Test Conditions and configuration**

The provisions of Paragraph 3.1 of Part IV of this Schedule 17 shall apply, unless other ranges have been defined by mutual agreement by the Parties in the relevant Commissioning Procedure.

In the event that the Registered Capacity Test is conducted at the Operating Water Head above 29.5 meters, duration of the Registered Capacity Test shall be conformed to technical limitations and availability of water supply. The Technical Capacity Table and the Technical XYB Unit Maximum Capacity Table shall be used for Registered Capacity Test purpose.

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**Technical Capacity Table**

Operating Water Head (m)	Technical Capacity (MW)						
	7 Units	6 Units	5 Units	4 Units	3 Units	2 Units	1 Unit
21.0	870.8	742.4	624.8	499.6	374.1	248.7	123.6
23.0	955.6	823.3	677.8	542.8	409.7	274.6	138.3
25.5	1067.1	917.2	762.5	610.4	459.8	307.6	154.3
26.0	1089.3	935.1	779.8	624.0	469.6	313.9	157.1
26.5	1111.2	952.6	796.5	637.3	479.1	319.9	159.7
27.0	1132.8	969.9	812.7	650.1	488.3	325.6	162.2
27.5	1154.0	986.8	828.0	662.2	496.9	330.9	164.4
28.0	1174.7	1003.4	842.2	673.4	504.9	335.9	166.5
28.5	1194.8	1019.7	855.1	683.5	512.3	340.5	168.4
29.0	1214.3	1035.6	866.5	692.4	518.8	344.6	170.1
29.5	1220.0	1051.3	876.1	700.0	524.5	348.2	171.6
29.7							
30.1							
30.4							
30.8							
31.1							
31.5							
31.9							
32.3							
32.7							
33.0							
33.4							

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**Technical Unit Maximum Capacity Table**

Operating Water Head (m)	Technical XYB Unit Maximum Capacity (MW)						
	7 Units	6 Units	5 Units	4 Units	3 Units	2 Units	1 Unit
21.0	125.4	124.6	125.7	125.5	125.1	124.6	123.8
23.0	137.7	138.2	136.4	136.4	137.1	137.6	138.5
25.5	153.9	154.1	153.6	153.4	153.9	154.2	154.5
26.0	157.1	157.2	157.0	156.9	157.2	157.4	157.3
26.5	160.3	160.1	160.4	160.2	160.4	160.4	159.9
27.0	163.5	163.1	163.7	163.5	163.5	163.2	162.4
27.5	166.6	165.9	166.8	166.5	166.4	166.0	164.7
28.0	169.6	168.8	169.7	169.4	169.1	168.5	166.8
28.5	172.5	171.5	172.3	171.9	171.5	170.8	168.7
29.0	175.4	174.3	174.7	174.2	173.8	172.9	170.4
29.5							
29.7							
30.1							
30.4							
30.8							
31.1							
31.5							
31.9							
32.3							
32.7							
33.0							
33.4							

#### 4.2 Conduct of test

The Registered Capacity Test shall be conducted for one (1), two (2), three (3), four (4), five (5), six (6), and seven (7) Generating Units and as part of the Commissioning Testing of Generator Subsystem (xii) after the acceptance of the Certificates of Readiness for Operation for all seven (7) three (3) Generating Units (see also Section 2.10.4(g)).

In respect of a given number of Generating Units and the relevant Operating Water Head, the “**Tested Maximum Capacity**” shall be equal to the maximum value of generating capacity that results from such Registered Capacity Test being referred to the Delivery Point.

The Registered Capacity Test for one (1) and two (2) Generating Units shall be conducted only either for the selected Commissioned Unit or the selected combination of two (2) Commissioned Units, such selection being carried out on the basis of the Unit N Tested Capacity Shortfall provided in Paragraph 3.3 of Part IV of this Schedule 17 as follows :

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- the Commissioned Unit which has the highest Unit N Tested Capacity Shortfall shall be selected for the Registered Capacity Test in respect of one (1) Generating Unit;
- the two (2) Commissioned Unit which has the highest Unit N Tested Capacity Shortfall compared to the remaining Generating Units shall be selected for the Registered Capacity Test in respect of two (2) Generating Units;
- the three (3) Commissioned Unit which has the highest Unit N Tested Capacity Shortfall compared to the remaining Generating Units shall be selected for the Registered Capacity Test in respect of three (3) Generating Units;
- the four (4) Commissioned Unit which has the highest Unit N Tested Capacity Shortfall compared to the remaining Generating Units shall be selected for the Registered Capacity Test in respect of four (4) Generating Units;
- the five (5) Commissioned Unit which has the highest Unit N Tested Capacity Shortfall compared to the remaining Generating Units shall be selected for the Registered Capacity Test in respect of five (5) Generating Units;
- the six (6) Commissioned Unit which has the highest Unit N Tested Capacity Shortfall compared to the remaining Generating Units shall be selected for the Registered Capacity Test in respect of six (6) Generating Units;
- the seven (7) Commissioned Unit which has the highest Unit N Tested Capacity Shortfall compared to the remaining Generating Units shall be selected for the Registered Capacity Test in respect of seven (7) Generating Units; and
- in the event that there is no Unit N Tested Capacity Shortfall or two or more amounts of Unit N Tested Capacity Shortfall are equal, (iii) three (3) Generating Units have equal Unit N Tested Capacity Shortfall for the case of conducting the Registered Capacity Test for two (2) Generating Units, the Generator shall be entitled to, subject to the compliance of the above selection criteria and EGAT approval, select the Commissioned Units for the relevant Registered Capacity Test.

### 4.3 Determination of the Tested Maximum Capacity

In respect of a given number of Generating Units and the relevant Operating Water Head, the Tested Maximum Capacity pursuant to a Registered Capacity

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Test shall be determined in accordance with the equations provided in Part III of Schedule 7, based on the electrical energy that is transmitted from the Generator System to the EGAT System as recorded by the XYB Metering System and the Loei 2 Metering System in accordance with Schedule 14.

#### 4.4 Interpretation and implication of test result

For the purpose of this Schedule 17 Part IV, and with reference to Tables 1.1.1, 1.2.1, 1.3.1, and 1.4.1 of Part III of Schedule 1, the Operating Water Head associated with the point at which, in a two-dimensional domain of Operating Water Head vs. generating capacity.

The Tested Maximum Capacity determined in accordance with Paragraph 4.3 of Part IV of this Schedule 17 shall be compared with the corresponding value of Contracted Capacity provided in Table 1.1.1 of Part III of Schedule 1 for the same Operating Water Head and the same number of Generating Units.

The results of such comparison shall be interpreted as follows:

##### 4.4.1 The resulting Tested Maximum Capacity is greater than or equal to the corresponding Technical Capacity

Subject to the determination in accordance with Paragraph 5 of Part IV of this Schedule 17, if the Tested Maximum Capacity determined in accordance with Paragraph 4.3 of Part IV of this Schedule 17 is greater than or equal to the corresponding Technical Capacity in Technical Capacity Table in Paragraph 4.1 of Part IV of Schedule 17, then:

- (i) all values of Contracted Capacity as set out in Table 1.1.1 of Part III of Schedule 1 for the given number of Generating Units shall be deemed to be confirmed, and the corresponding column of Table 1.3.1 of Part III of Schedule 1 shall be identical to the one in Table 1.1.1 of Part III of Schedule 1; and
- (ii) all values of Contracted XYB Unit Maximum Capacity as set out in Table 1.2.1 of Part III of Schedule 1 for the given number of Generating Units shall be deemed to be confirmed, and the corresponding column of Table 1.4.1 of Part III of Schedule 1 shall be identical to the one in Table 1.2.1 of Part III of Schedule 1.

##### 4.4.2 The resulting Tested Maximum Capacity is less than the corresponding Technical Capacity

Subject to the determination in accordance with Paragraph 5 of Part IV of this Schedule 17, if: (i) the Tested Maximum Capacity determined in accordance with Paragraph 4.3 of Part IV of this Schedule 17 is less than the corresponding Technical Capacity in Technical Capacity Table in Paragraph 4.1 of Part IV of Schedule 17; then:

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- (A) Table 1.3.1 of Part III of Schedule 1 shall be compiled or revised by referring to the corresponding Contracted Capacity for the same Operating Water Head and same number of Generating Units as set out in Table 1.1.1 of Part III of Schedule 1 as follows:

For any Operating Water Head k:

Let:  $RegCap_k$  be the Registered Capacity for Operating Water Head k;

$ConCap_k$  be the corresponding Contracted Capacity for Operating Water Head k;

$\Delta P$  be the shortfall of the resulting Tested Capacity from the corresponding Technical Capacity at the Operating Water Head at the time of Registered Capacity Test;

Then:  $RegCap_k = ConCap_k - \Delta P$

- (B) Table 1.4.1 of Part III of Schedule 1 shall be compiled or revised by referring to the corresponding Contracted XYB Unit Maximum Capacity for the same Operating Water Head and same number of Generating Units as set out in Table 1.2.1 of Part III of Schedule 1 as follows:

- (1) The resulting “**Tested XYB Unit Maximum Capacity**” for the Operating Water Head at the time of Registered Capacity Test and the given number of Generating Units shall be determined as the total active power in respect of both transmission circuits of the Transmission Line, each of which measured by the respective energy meter of the XYB Metering System pursuant to the Registered Capacity Test, being further divided by the number of Generating Units for the given combination.

- (2) For any Operating Water Head k:

Let:  $RegXYBUnitCap_k$  be the Registered XYB Unit Maximum Capacity for Operating Water Head k;

$ConXYBUnitCap_k$  be the corresponding Contracted XYB Unit Maximum Capacity for Operating Water Head k;

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$\Delta P$  be the shortfall of the resulting Tested XYB Unit Maximum Capacity from the corresponding Technical XYB Unit Maximum Capacity at the Operating Water Head at the time of Registered Capacity Test;

Then:  $\text{RegXYBUnitCap}_k = \text{ConXYBUnitCap}_k - \Delta P$

#### **4.5 Revision pursuant to Additional Testing and Annual Testing**

Additional Testing or Annual Testing for the purpose of determining capacities shall be carried out in the same manner and under the same conditions as set out in Paragraphs 3 and 4 of Part IV of this Schedule 17, unless other conditions have been mutually agreed by the Parties.

Upon the completion of such Additional Testing or Annual Testing, the Registered Capacity, the Registered XYB Unit Maximum Capacity and the Registered XYB Unit Minimum Capacity shall be determined and the corresponding tables be accordingly revised, as appropriate, in the same manner as set out herein.

### **5 Determination of the Registered Capacity upon reassessment of the Registered Stability Limit**

Whenever the Registered Stability Limit is updated with a value less than the Contracted Stability Limit, the Registered Capacity as determined in Paragraph 4.4 of Part IV of this Schedule 17 shall be capped as follows and Tables 1.3.1 and 1.4.1 of Part III of Schedule 1 shall be updated accordingly.

Let: PreRegCap be the value of Registered Capacity determined in accordance with Paragraph 4.4 of Part IV of this Schedule 17 prior to any adjustment of this Paragraph 5 of Part IV of this Schedule 17;

RegStabLim be the Registered Stability Limit determined in accordance with Part II of Schedule 1; and

RegCap be the Registered Capacity that is determined by taking into account the effect of such Registered Stability Limit;

Then:  $\text{RegCap} = \text{Min} [\text{PreRegCap}, \text{RegStabLim}]$

### **6 Applications the of generating capacity pursuant to the Registered Capacity Test**

The Registered Capacity determined in accordance with Paragraph 4 of Part IV of this Schedule 17 shall be used for various applications of this Agreement, including:

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- (i) determining any liquidated damages in respect of deficiency in the generating capacity resulting from the Commissioning Testing;
- (ii) compiling Tables 1.3.1 and 1.4.1 of Part III of Schedule 1, as applicable; and
- (iii) determining the Gross Electrical Energy in accordance with Part II of Schedule 7.

## **7 Registered XYB Unit Minimum Capacity Test**

### **7.1 Test conditions and configuration**

The provisions of Paragraph 3.1 of Part IV of this Schedule 17 shall apply.

### **7.2 Conduct of test**

The Registered XYB Unit Minimum Capacity Test shall be conducted as part of the Commissioning Testing of Generator Subsystem (xii) after the acceptance of the Certificates of Readiness for Operation for one (1), two (2), three (3), four (4), five (5), six (6) and seven (7) and three (3) Generating Units (see also Section 2.10.4(g)).

The Registered XYB Unit Minimum Capacity Test for one (1), two (2), three (3), four (4), five (5), six (6) and seven (7) Generating Units shall be conducted only for the selected Commissioned Unit or the selected combination of two (2) Commissioned Units, such selection being carried out on the basis of the Unit N Tested Capacity Excess provided in Paragraph 3.3 of Part IV of this Schedule 17 as follows:

- the Commissioned Unit which has the highest Unit N Tested Capacity Excess shall be selected for the Registered XYB Unit Minimum Capacity Test in respect of one (1) Generating Unit. No specific test shall be required as part of the Registered XYB Unit Minimum Capacity Test and the Registered XYB Unit N Minimum Capacity determined pursuant to Paragraph 3.3 of Part IV of this Schedule 17 for the selected Generating Unit shall apply;
- the two (2) Commissioned Units which have the highest Unit N Tested Capacity Excess compared to the remaining Generating Units shall be selected for the Registered XYB Unit Minimum Capacity Test in respect of two (2) Generating Units;
- the three (3) Commissioned Units which have the highest Unit N Tested Capacity Excess compared to the remaining Generating Units shall be selected for the Registered XYB Unit Minimum Capacity Test in respect of three (3) Generating Units;

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- the four (4) Commissioned Units which have the highest Unit N Tested Capacity Excess compared to the remaining Generating Units shall be selected for the Registered XYB Unit Minimum Capacity Test in respect of four (4) Generating Units;
- the five (5) Commissioned Units which have the highest Unit N Tested Capacity Excess compared to the remaining Generating Units shall be selected for the Registered XYB Unit Minimum Capacity Test in respect of five (5) Generating Units;
- the six (6) Commissioned Units which have the highest Unit N Tested Capacity Excess compared to the remaining Generating Units shall be selected for the Registered XYB Unit Minimum Capacity Test in respect of six (6) Generating Units;
- the seven (7) Commissioned Units which have the highest Unit N Tested Capacity Excess compared to the remaining Generating Units shall be selected for the Registered XYB Unit Minimum Capacity Test in respect of seven (7) Generating Units; and
- in the event that either there is no Unit N Tested Capacity Excess or two or more amounts of Unit Tested N Capacity Excess are equal, the Generator shall be entitled to, subject to the compliance of the above selection criteria and EGAT approval, select the Commissioned Units for the relevant Registered XYB Unit Minimum Capacity Test.

### **7.3 Determination of the Tested XYB Unit Minimum Capacity Test**

In respect of a given number of Generating Units and the relevant Operating Water Level, the “Tested XYB Unit Minimum Capacity” shall be equal to the greater of the Contracted XYB Unit Minimum Capacity and the minimum value of the active power set point for which stable operation is maintained as resulting from such Registered XYB Unit Minimum Capacity Test, determined at the respective Unit Metering Point and being further divided by the number of Generating Units for the given combination.

For the purpose of such Registered XYB Unit Minimum Capacity Test, stable operation shall be deemed to be maintained if the maximum deviation of the relevant generating capacity from the active power set point over a period of at least sixty (60) seconds is less than or equal to three per cent (3%) of such active power set point.

### **7.4 Interpretation and implication of test result**

The Tested XYB Unit Minimum Capacity shall be compared with the Contracted XYB Unit Minimum Capacity as per Table 1.2.3 of Part III of Schedule 1 for the relevant Operating Water Level as existing at the time

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when such test is conducted, and the relevant number of Generating Units being tested.

The results of such comparison shall be interpreted as follows:

7.4.1 The resulting Tested XYB Unit Minimum Capacity is less than or equal to the corresponding Contracted XYB Unit Minimum Capacity

If the Tested XYB Unit Minimum Capacity, determined in accordance with Paragraph 7.3 of Part IV of this Schedule 17, is less than or equal to the corresponding Contracted XYB Unit Minimum Capacity in Table 1.2.2 of Part III of Schedule 1, then all values of Contracted XYB Unit Minimum Capacity as set out in Table 1.2.2 of Part III of Schedule 1 for the given number of Generating Units shall be deemed to be confirmed, and the corresponding column of Table 1.4.2 of Part III of Schedule 1 shall be identical to the one in Table 1.2.2 of Part III of Schedule 1.

7.4.2 The resulting Tested XYB Unit Minimum Capacity is greater than the corresponding Contracted XYB Unit Minimum Capacity

If the Tested XYB Unit Minimum Capacity, determined in accordance with Paragraph 7.3 of Part IV of this Schedule 17, is greater than the corresponding Contracted XYB Unit Minimum Capacity in Table 1.2.2 of Part III of Schedule 1 corresponding to the Operating Water Level prevailing at the time of test and the number of Generating Units tested, then the Registered XYB Unit Minimum Capacity for the number of Generating Units tested in Table 1.4.2 of Part III of Schedule 1 shall be compiled or revised by referring to the corresponding Contracted XYB Unit Minimum Capacity for the same Operating Water Level and same number of Generating Units as set out in Table 1.2.2 of Part III of Schedule 1 as follows:

For any Operating Water Level  $k$  of Table 1.4.2 of Part III of Schedule 1:

Let:  $RegXYBUMinCap_k$  be the Registered XYB Unit Minimum Capacity for Operating Water Level  $k$ ;

$ConXYBUMinCap_k$  be the corresponding Contracted XYB Unit Minimum Capacity for Operating Water Level  $k$ ; and

$\Delta P$  be the excess of the resulting Tested XYB Unit Minimum Capacity over the corresponding Contracted XYB Unit Minimum Capacity at the Operating Water Level at the time of conducting such Registered XYB Unit Minimum Capacity Test;

Then:  $RegXYBUMinCap_k = ConXYBUMinCap_k + \Delta P$

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**8 Determination of the Average Energy Coefficient**

Upon completion of the Registered Capacity Tests for all seven (7) Generating Units and the subsequent determination of the Registered Capacity, the Average Energy Coefficient shall be determined as follows:

Let: AvEnCoef be the Average Energy Coefficient (in kWh / m<sup>3</sup>);

RegCap be the Registered Capacity (in kW) at Operating Water Head of 29.5 m ; and

Q be the corresponding amount of actual turbine water in one (1) hour, being equal to 4900 x 3,600 (in m<sup>3</sup>/h);

Then: AvEnCoef = RegCap / Q

**9 Requirements for testing of the the Generator Actual Stability Data**

Verification of the the Generator Stability Data shall be considered as an Acceptance Test for the purpose of determining the Registered Stability Limit.

This Paragraph 9 of Part IV of this Schedule 17 describes the testing methodology and the associated standard for each of the the Generator Stability Data.

**9.1 Unit inertia constant H**

Measuring method : Checking based on manufacturer calculation notice and Unit mechanical drawings.

Tolerance/Accuracy : The value shall be a minimum value. There shall be no allowance for measurement and calculation inaccuracies. The agreed accuracy is one per cent (1%). The actual tested inertia shall be as determined from the calculation notice less one per cent (1%).

**9.2 Generator unsaturated direct transient reactance X'd**

Measuring method : As per IEC 60034-4 - Sudden three-phase short-circuit at 0.4 Un at the Unit HV circuit breaker.

Tolerance : The value shall be a maximum value. There shall be no tolerance in the significant direction.

**9.3 Generator unsaturated direct sub-transient reactance X''d**

Measuring method : As per IEC 60034-4 - Sudden three-phase short-circuit at 0.4 Un at the Unit HV circuit breaker.

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Tolerance : The value shall be a maximum value. There shall be no tolerance in the significant direction.

#### 9.4 Generator open circuit transient time constant T'do

Measuring method : As per IEC 60034-4 - Field current decay with open armature winding.

Tolerance : The value shall be a maximum value. There shall be no tolerance in the significant direction.

#### 9.5 Unit step-up transformer short-circuit reactance X<sub>t</sub>

Measuring method : As per IEC 60076-1 - Short-circuit test.

Tolerance : The value shall be a maximum value. There shall be no tolerance in the significant direction.

#### 9.6 Unit excitation system ceiling voltage U<sub>p</sub>

Measuring method : Excitation system supplied under 80% of its rated voltage (AC side). Ceiling voltage measurement shall be corrected to field winding temperature of 75 °C.

Tolerance/Accuracy : The value shall be a minimum value. There shall be no allowance for measurement inaccuracies. The agreed accuracy (accuracy of voltmeter) is one per cent (1%). The tested ceiling voltage shall be the measured value less one per cent (1%).

#### 9.7 Other the Generator Stability Data

In order to determine the Generator Actual Stability Data, the measuring method of any Stability Data listed in the Part II of the Schedule 1 which is not addressed in Schedule 17 shall be defined by mutual agreement in the Commissioning Procedures.

For such other the Generator Stability Data the Generator shall not benefit from the tolerance set out in either the Measuring Standard or from the inaccuracy of the measuring method.

### 10 Specific requirements for testing of the Power System Stabilizer

To be completed together with the Commissioning Procedures.

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**11 Specific requirements for testing voltage waveform**

Test for the purpose of testing voltage waveform shall be conducted and their results interpreted in accordance with IEC 60034.1 Section 11.

**12 Specific requirements for testing Unit Primary Response**

Testing for the Unit Primary Response for a given Generating Unit shall be conducted under the following testing conditions:

- (i) the frequency change is simulated by the injection of a +/- 0.15 Hz step signal on the system frequency input of the speed governor, such signal to be injected after a steady state operating condition to be defined in the Commissioning Procedures and for a period no less than thirty-five (35) seconds;
- (ii) the measurement for the change of active power output (measured in MW at the Unit Metering Point) shall be made at a time that is no less than thirty-five (35) seconds after the injection of the step signal; and
- (iii) the governor droop shall be set at 4%.

**13 Specific requirements for testing Unit Primary Response and AGC Performance**

13.1 Testing for the Unit Primary Response for a given Generating Unit shall be conducted under the following conditions:

- (i) the frequency change is simulated by the injection of a +0.15 Hz and/or - 0.15 Hz step signal on the system frequency input of the speed governor, such signal to be injected after a steady state operating condition to be defined in the Commissioning Procedures and for a period no less than one hundred and twenty (120) seconds.
- (ii) the measurement of the change of active power output (measured in MW at the Unit Metering Point) shall be made at a time no more than twenty – five (25) seconds after the injection of the step signal.
- (i) the governor shall have a permanent speed droop not more than 4% while the governor deadband is not more than +/-0.05 Hz.
- (ii) the change of active power output (measured in MW at the Unit Metering Point) shall reach the maximum active power of governor response within twenty-five (25) seconds and the increase or decrease of active power output caused by Primary Response must be sustained not less than sixty (60) seconds.
- (iii) SCADA records and revenue meters shall be employed to the Primary Response assessment.

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- 13.2 Testing of the AGC Performance of a given Generating Unit shall be conducted under the following conditions:
- (i) the Generating Unit is operated in Automatic Generation Control mode.
  - (ii) three (3) types of the active power set point signals consisting of (i) Test mode (TE), (ii) Fixed Base mode (BA mode), and (iii) Base Regulation mode (BR mode) will be employed in this test.
  - (iii) the Generating Unit shall increase or decrease active power output measured at Unit Metering Point following the active power set point coming from NCC as fast as its actual loading/de-loading of a given Generating Unit, but not less the declared loading/de-loading presenting in Part II of Schedule 1.
  - (iv) the active power of each Generating Unit that Generator dedicates to EGAT shall reach the value of the active power set point coming from NCC. The active power output measured at the Unit Metering Point shall start to response the active power set point coming from NCC within twenty four (24) seconds and stable operation of each Generating Unit is required.
  - (v) SCADA records and revenue meters shall be employed to assessment the AGC Performance of each Generating Unit.

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**Part V: Specimen Commissioning Procedures****1 Specimen procedure for testing optical fiber cable (OPGW and underground optical fiber cable)**

The optical fiber attenuation tests shall be performed in accordance with the IEC 60793-1 publication (to be confirmed).

The overall optical fiber link test is performed from the Optical Distribution Frame by means of ODTR (back scattering method). This test is carried out at each end and for both wavelength (1,310 and 1,550 nm).

**1.1 Specimen procedure for testing optical fiber line terminal equipment: STM-1 SDH multiplexer**

- verification of regulated power supply outputs
- measurement of optical transmitted power
- measurement of optical received power
- measurement of receiver sensitivity
- check of service telephone and service data channels
- functional check of indications and alarms
- Bit error test after connection to the optical fiber link

**PLC link**

These tests shall be carried out in accordance with IEC 60481 and IEC 60507 publications.

- verification of regulated power supply outputs
- test on line matching units: the purpose is to ensure the optimal matching between the overhead line and the PLC equipment
- measurement of the transmitted power
- measurement of the transmission, reception and carriers frequencies
- measurement of the received power
- set up and test of the transmitted and received level

**Teleprotection equipment**

- verification of regulated power supply outputs
- test on transmitted and received levels
- test on signaling transmission in normal operation (phase to phase coupling for PLC link)
- signaling time transmission measurement

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## Part VI: Post COD Testing

This Part VI and the relevant Post COD Testing Procedures shall be completed and agreed by the Parties at the same time of the preparation of the Commissioning Procedures.

### 1 On-line monitoring

Either party may carry out on-line monitoring at any time and under any operating condition.

Such on-line monitoring shall not impact the Final Availability. It may be carried out among others using the data acquired and transmitted by the SCADA System and the Metering System.

If available, each Party shall provide such information to the other as such Party may reasonably request in order to supplement its on-line monitoring, provided that such information is not readily available to such other Party by any other means.

Pursuant to an on-line monitoring, the Party that carried out such on-line monitoring may notify the other Party of any problem it has found and/or request an Additional Testing to be conducted.

On-line monitoring may in particular be applied to:

- (i) Start-stop including start-up time;
- (ii) Synchronizing;
- (iii) AVR;
- (iv) Relays and protection function; and
- (v) SCADA and Communication System.

### 2 On-Line Testing

Where feasible, any Annual Testing or Additional Testing shall be carried out by On-Line Testing in order to limit its impact on the Availability.

Either Party may carry out On-Line Testing. Such On-Line Testing shall be deemed effective provided that the operating conditions during such On-Line Testing are consistent with the relevant Post COD Testing Procedures, regardless of whether or not the other Party is informed prior to such On-Line Testing.

EGAT shall be entitled to use the results of the On-Line Testing as the basis for determining the liquidated damages for failure to achieve the Threshold Operating Characteristics provided in Sections 9.6.7(a), 9.6.7(b), 9.6.7(c) and 9.6.7(d). Subject to the Generator's option to request for verification by Additional Testing and/or to

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cure such deficiency pursuant to each such On-Line Testing in accordance with Sections 9.6.7 or 9.9, as applicable, such liquidated damages shall be applied starting from the date on which EGAT notifies the relevant results to the Generator until the date when a new result is established pursuant to an Additional Testing, at such daily rate as provided in Section 9.6.7.

Except where explicitly stated otherwise in the corresponding Post COD Testing Procedures, such On-Line Testing shall abide by the same provisions as those applicable to Commissioning Testing.

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**Schedule 18**

**CONSTRUCTION SCHEDULE**

This Schedule 18 provides the construction schedules of the EGAT Transmission Facilities and the master schedule of the Project to be undertaken by Generator. The Milestone Dates referred to in the tables in this Schedule 18 are as specified in Section 8.2.

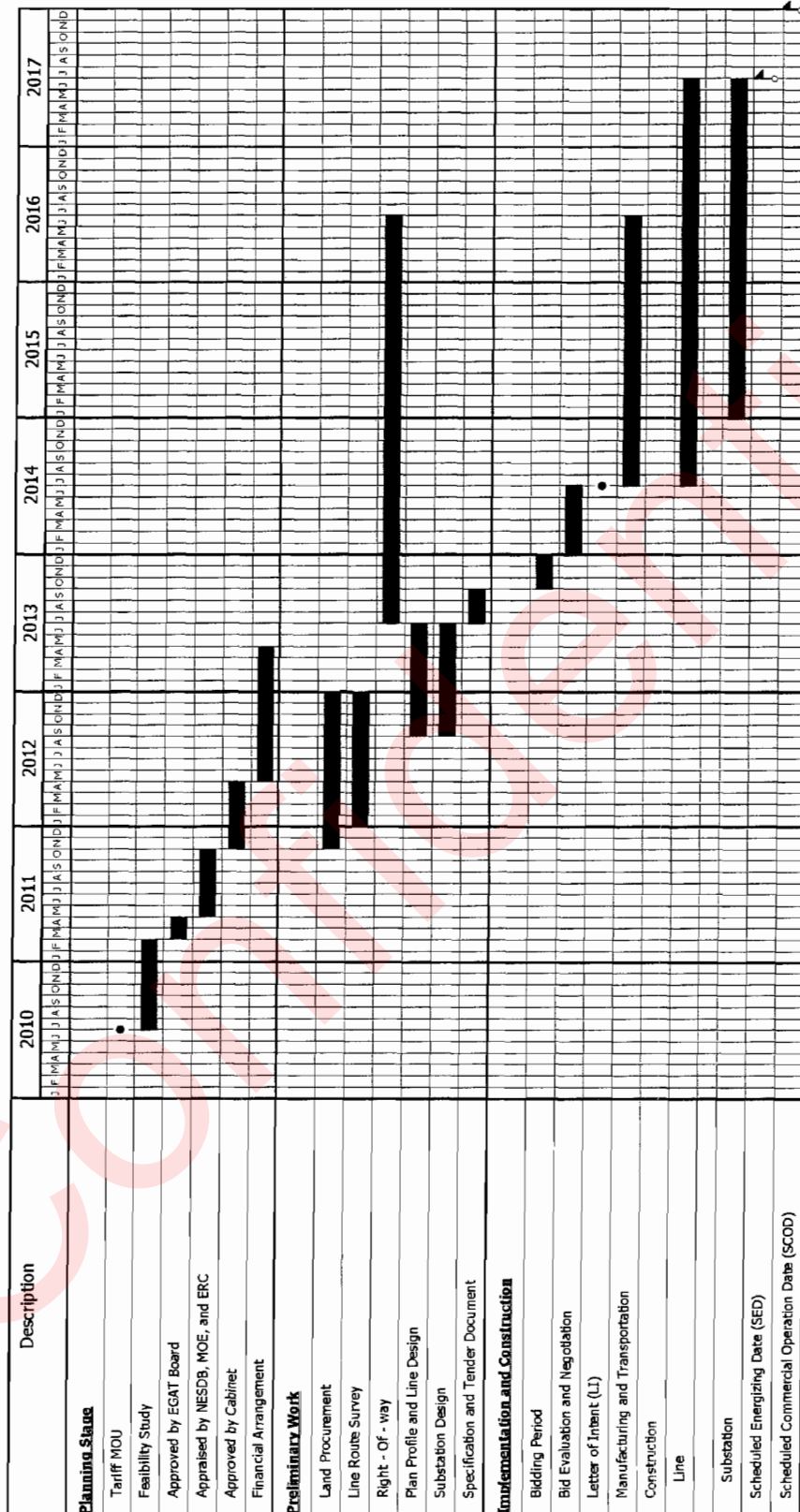
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Table 18.1 Construction Schedule of The EGAT Transmission Facilities

**Implementation Schedule for Transmission System Development for Power Purchase from Xayaburi Hydropower Plant Project**

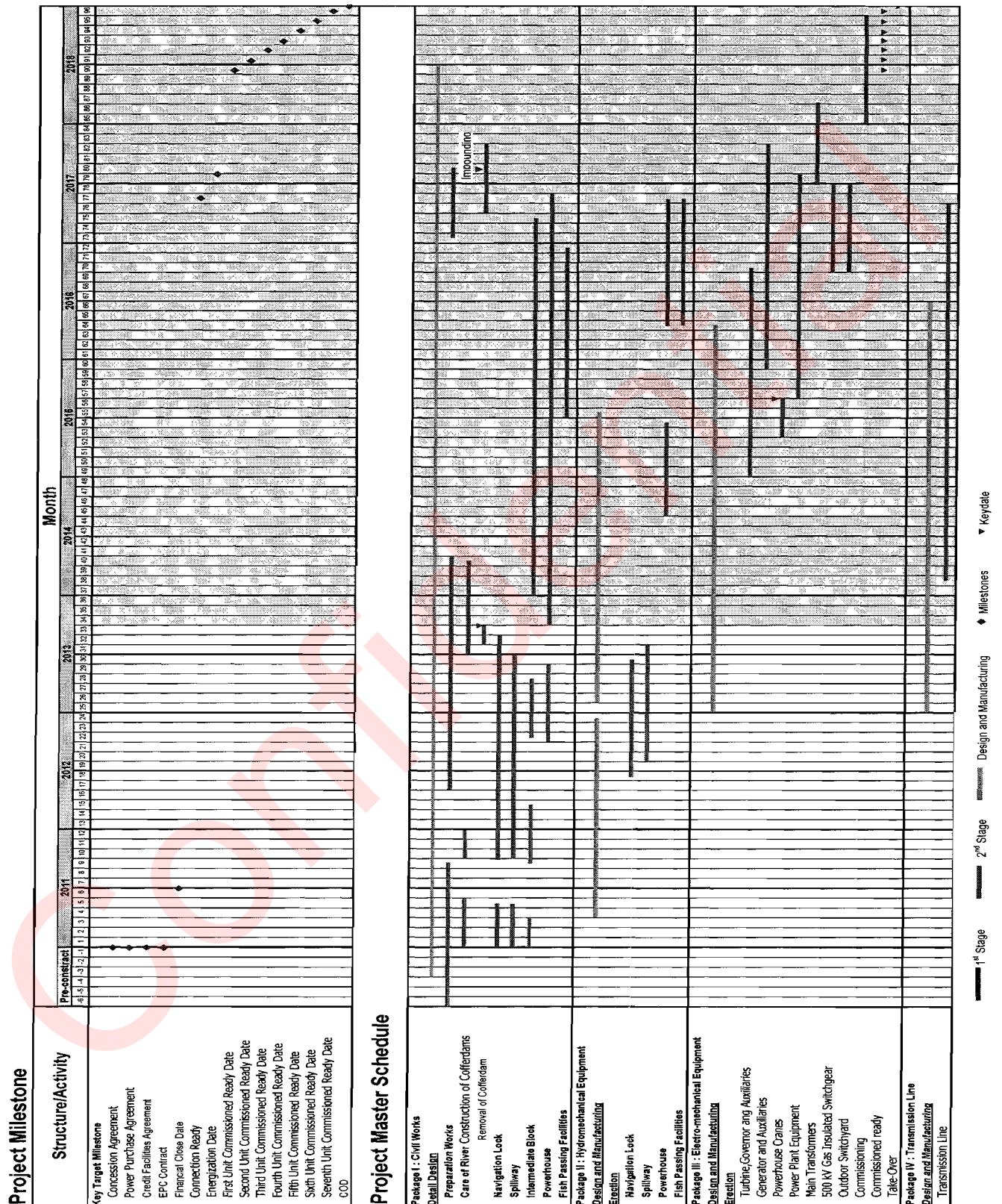


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Table 18.2 Construction Schedule of Generator System



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**Schedule 19****PROJECT PROGRESS REPORT**

Pursuant to Section 2.3.1 (f) and Section 2.3.2 of the Agreement, Generator and EGAT shall issue respectively reports.

The quarterly project development report to be issued by Generator during the period starting from the end of the first full calendar month following the Execution Date and ending at the Financial Close Date shall be in English language. These reports shall be in compliance with the framework set out in Part I of this Schedule and certified by an authorized officer of Generator.

The monthly progress reports to be issued by Generator during the period starting within twenty (20) days after the end of the first full calendar month following the Financial Close Date and ending at the Commercial Operation Date shall be in English language and in compliance with the framework set out in Part II of this Schedule. An authorized officer of Generator shall certify these reports.

The monthly progress reports to be issued by EGAT during the period starting within twenty (20) days after the end of the first full calendar month following the EGAT Construction Obligation Commencement Date and ending at the Commercial Operation Date shall be in English language and in compliance with the framework set out in Part III of this Schedule. An authorized officer of EGAT shall certify these reports.

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**Part I of Schedule 19****Form of the quarterly project development report to be issued by Generator during the period prior to the Financial Close Date****Abbreviations****Project Background and Overview**

- I. Executive Summary**
- II. PPA implementation**
- III. Project Financing**
- IV. EPC Contract Work Progress**

- Summary Progress of Preliminary Construction Activities

This section shall provide a brief status regarding the preliminary construction activities that Generator may have procured during the last trimester.

The significant events and circumstances that occurred during the last trimester should be identified in particular any of those that in the reasonable opinion of Generator are likely (either singly or in combination with the effects of prior events and circumstances) to have a material adverse effect on the construction and Commissioning Testing of any Generator Subsystem in accordance with the contractual requirements set forth in the Agreement.

- Forecasted preliminary construction activities.

The main anticipated preliminary construction activities for the next trimester should be identified (this list of activities will be provided on a purely indicative and non binding basis).

**V. Environmental and Resettlement**

This section shall provide a brief status regarding the Environmental & Social matters or activities during the last trimester.

**VI. Management Matters**

This section shall provide a brief status regarding the Company Information, Contracts/Permitting and Licensing and also Miscellaneous.

**VII. Other Key Issues**

This section shall provide a brief status of quality assurance/quality control, Health and Safety program and Man Power.

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**VIII Annexes**

- A. Summary Brief of the Project Background and the Contractual Structure
- B. Photographs - Each photographs shall contain, upon its face, the date, the name of the Contractor and the title of the view taken.
- C. Reference

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## Part II of Schedule 19

### Form of the monthly progress report to be issued by Generator From FCD until COD

#### Abbreviations

#### Project Background and Overview

#### I. Executive Summary

#### II. PPA implementation

#### III. Project Financing

- Uses and Sources of Funds

This section shall indicate any major items of the Uses of Funds which is the lump-sum turnkey EPC, Owner Expenditure and Financial Expenditure. And the Sources of Funds which is the Debt Draw down and Equity Injection that occurred and was planned for the Project.

- Debt Draw down and Equity Injection made under the Finance Documents

This section shall show the draw downs and Equity Injection made by Generator under the Finance Documents (i) during the last month (ii) as of the first draw down up to the last month and (iii) the actual draw down progress for the construction of the Generator System against the schedule for such draw downs set forth in Schedule 22 of the Agreement.

#### Project Expenditure

This section shall show EPC Cost including additional of Variation Orders and Adjustment Events, Owner Expenditure which cover the cost for Project Administration, Independent Engineer, Environment and Resettlement and also contingencies and Financial Expenditure comprising of interest during construction and other associated financial fees for the last month.

#### IV. EPC Contract Work Progress

- Monthly construction progress of the Generator System.

This section shall provide a brief status regarding the construction works progress (including design and procurement activities, permitting and licensing activities and land access) of the Generator System for the last month. The significant events and circumstances that occurred during the relevant month should be identified.

- Construction Schedule & Actual Progress

A chart or a table will show the actual progress of the construction of the Generator System against the planned construction milestones of such Generator System.

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Any changes to the construction schedules and/or the likely effect of such changes on the scheduled Commissioning Testing of all Generator Subsystems and any material deviations of the (i) the actual draw downs from the schedule for such draw downs set forth in Schedule 22 and (ii) the actual construction activities from the schedules for such construction activities set forth in Schedule 18, should be indicated together with an explanation as the causes and reasons for such deviations and the remedial actions already undertaken or that are planned to be undertaken in order to achieve the original schedules therefore.

- Future construction activities in relation with the completion of the Generator System

The main anticipated construction activities for the next month in relation with the completion of the Generator System should be identified (this list of activities will be provided on a purely indicative and non binding basis).

**V. Variations and Claims**

**VI. Environmental and Resettlement**

**VII. Management Matters**

**VIII. Other Key Issues**

This section shall provide a brief status of quality assurance/quality control, Health and Safety program and Man Power.

**IX. Annexes**

- A. Summary Brief of the Project Background and the Contractual Structure
- B. Photographs - Each photographs shall contain, upon its face, the date, the name of the Contractor and the title of the view taken.
- C. Reference

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**Part III of Schedule 19**  
**Form of the monthly progress report to be issued by EGAT**  
**From ECOCD until COD**

**Abbreviations & Glossary****Project Location map**

- I. Executive Summary**
- II. Project Background/Project Scheme**
- III. Project Cost and Benefits**
- IV. Procurement Work**
- V. Status of Bidding and Contract**
- VI. EGAT Access Rights**

This section shall provide a brief status regarding the progress made during the previous month and the next actions to be made for the acquisition/ easements relating to access rights for the construction of the EGAT Transmission Facilities.

**VII. Progress of Construction works**

- Monthly construction progress of the EGAT Transmission Facilities

This section shall provide a brief status regarding the works progress of the EGAT Transmission Facilities and, if applicable, the Common Interconnection Facilities, (including design and procurement activities, permitting and licensing activities) for the previous month. The significant events and circumstances that occurred during the relevant month should be identified.

- Project Schedule & Actual Progress

A chart or a table will show the actual progress of the construction of the EGAT Transmission Facilities and, if applicable, the Common Interconnection Facilities, against the planned construction milestones of such EGAT Transmission Facilities and, if applicable, the Common Interconnection Facilities.

A description of the significant events and circumstances that occurred during the last month which, in the reasonable opinion of EGAT, are likely (either singly or in combination with the effects of prior events and circumstances) to have a material adverse effect on the construction and Commissioning Testing of the EGAT Transmission Facilities and, if applicable, the Common Interconnection Facilities, in accordance with the requirements set forth in the Agreement should be provided. In addition, any changes to the construction schedules of the EGAT Transmission Facilities and, if applicable, the Common Interconnection Facilities, during the previous month, the likely effect of such changes on the scheduled Commissioning Testing of the EGAT Transmission Facilities and/or the Common Interconnection Facilities, any effects thereof which may impact the start-up and testing schedule therefore and any material deviations of the actual construction activities from the schedules for such construction activities set forth in Schedule 18, should be indicated together with an explanation as the causes and reasons for

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such deviations and the remedial actions already undertaken or that are planned to be undertaken in order to achieve the original schedules therefor.

- Future construction activities in relation with the completion of the EGAT Transmission Facilities and, if applicable, the Common Interconnection Facilities.

The main anticipated activities for the next month in relation with the completion of the EGAT Transmission Facilities should be identified (this list of activities will be provided on a purely indicative and non binding basis).

#### VIII. Appendices

- A. Project Schedule and Actual Progress
- B. Photographs - Each photographs shall contain, upon its face, the date, the name of the Contractor and the title of the view taken.
- C. Drawings/Diagrams

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**Schedule 20****MAINTENANCE PLAN**

This Schedule 20 presents information concerning maintenance or repair activities which are intended to be carried out as either the Generator Planned Outages or EGAT Planned Outages, and which may impact the Availability of one or more Generating Units. The information provided herein is indicative and the actual planned outage programs will be prepared and finalized in accordance with Paragraph 5.2.1 of Part I of Schedule 1 and Paragraph 1.1 of Part I of Schedule 3.

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### Part I: Maintenance Plan in respect of the Generator System

For the purposes of defining and scheduling the Generator Planned Outages, the Parties agree that the amount of the Generator Planned Outages measured in terms of Unit-hours per any twelve (12) month period starting from the Commercial Operation Date or any anniversary thereof (the “**Annual Maintenance Period**”) shall be generally consistent with the Maintenance Plan provided in Paragraph 1.4 and Table 20.3 of Part I of Schedule 20.

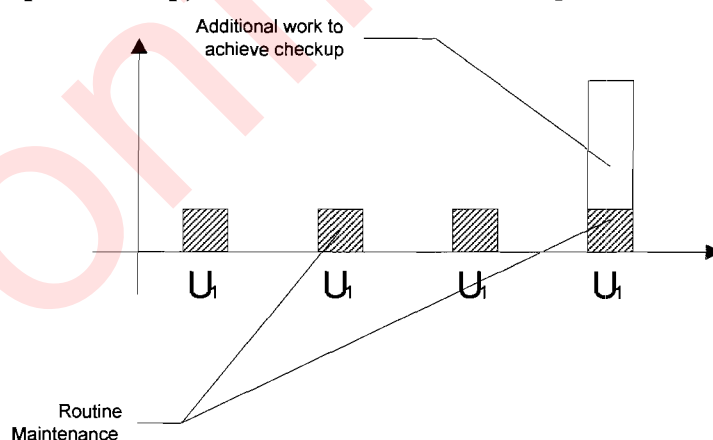
#### 1. Maintenance Type, Cycle and Activities

##### 1.1 **Generating Unit Maintenance**

Planned maintenance activities in respect of the Generating Units that are of cyclical nature can typically be divided into and classified by a number of Maintenance Types as described below.

For the purpose of presentation, the typical duration and typical maintenance work in respect of each Maintenance Type shall include the corresponding contents of such other Maintenance Types having shorter cycle time. For example, the typical duration of a Partial Overhaul for a particular Generating Unit in a given Annual Maintenance Period will include the typical duration required to perform [the Routine Maintenance and] the Checkup of such Generating Unit in the same Annual Maintenance Period, as applicable.

Except for Routine Maintenance which is carried out as multiple events throughout the relevant Annual Maintenance Period (for example on a half year basis), the remaining portion of the relevant Maintenance Type (for example Checkup) shall be considered as a single event.



The typical duration specified in Table 20.1 applies to a single Generating Unit. For such estimate that involves more than one (1) Generating Unit, the relevant duration shall be determined on a pro rata basis (for example in an Annual Maintenance Period where seven (7) Generating Units are subject to Routine Maintenance the total outage duration associated with this Maintenance Type shall be 1008 Unit-hours).

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**Table 20.1 Maintenance Types, Cycles and Activities for a Generating Unit**

Type	Cycle	Duration	Maintenance Work	Remarks
Routine Maintenance	1 year	144 Unit-hours	Coolers, Excitation system (rotor rings, brushes, contactor), electrical and mechanical protections, oil filling, filters cleaning, inspection and control of generator and turbine, calibration of metering equipment.	Most of these maintenance activities are intended to be performed during the Low Daily River flow Period, in particular during the month of December-June.
Checkup	2 years	192 Unit-hours (72+120)	Same as Routine maintenance plus : Runner inspection, governor adjustment, oil treatment, inlet valves downstream seals, wicket gate inspection, switchgear (circuit breakers).	A significant part of these maintenance activities are intended to be performed during the Low Daily River Flow Period, in particular during the month of December-June.
Partial Overhaul	6 Years	552 Unit-hours (192+360)	Same as Checkup plus : Shaft seal replacement, runner repair in position, bearings and seals inspection and repair, transformer oil treatment, partial stator re-wedging, generator cleaning, small size gates and valves replacement, large gates and valves refurbishment, labyrinths seals, dielectric tests.	A significant part of these maintenance activities are intended to be performed during the Low Daily River Flow Period, in particular during the month of December-June.
Overhaul	12 Years	1152 Unit-hours (552+600)	Same as Partial Overhaul plus: Runners replacement, generator refurbishment, wicket gate repair, gate and valves refurbishment, circuit breakers refurbishment.	A significant part of these maintenance activities are intended to be performed during the Low Daily River Flow Period, in particular during the month of December-June.

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## 1.2 Facilities Maintenance

Facilities Maintenance requires that the entire system be shut down and affects the operation of all seven (7) Generating Units. It may generally be considered as a single event.

**Table 20.2 Maintenance Type, Cycle and Activities for the Facilities**

Type	Cycle	Duration	Maintenance Work	Remarks
Check up and Maintenance	6 Years	72hours (7x72 Unit-hours)	<p><b>Facility</b> Intake safety gate, primary cooling system, and common auxiliaries system.</p> <p><b>Substation</b> Busbars, circuit breakers, disconnectors, transformers bushings.</p> <p><b>Upstream and Downstream Works</b> Intake structure and gates, Visit of hydraulic circuit, repair of tailrace channel, Regulating Pond civil works and electromechanical equipment.</p> <p><b>Transmission Line</b> Towers, hardware and fittings, conductors</p>	

## 1.3 Transmission Line Maintenance

The maintenance of the Generator Transmission Line (replacement of insulators, repair of bundles, etc.) shall be performed as follows:

- (i) in general as “live maintenance” without shutting down either transmission circuit;
- (ii) occasionally on one (1) transmission circuit that is shut down while the other transmission circuit remains energized and available to transmit electrical energy to the Delivery Point; and

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- (iii) under certain specific and necessary circumstances, on both transmission circuits that are shut down and thus affect the operation of all seven (7) Generating Units.

Other than when associated with Facilities Maintenance, the Line Maintenance Outage shall not be included as one type of the Generator Planned Outage. The occurrence of such Line Maintenance Outage shall as far as practicable be coordinated between the Parties. Any Line Maintenance Outage the occurrence of which has been concurred by both Parties through the coordination referred to herein shall be defined as a “**Coordinated Line Maintenance Outage**”, the effect of which shall be accounted for in accordance with the Paragraph 5.2.4 of Part I of Schedule 1 and Paragraph 3.3 of Part II of Schedule 3.

#### 1.4 Maintenance Plan for the period after the Commercial Operation Date

The Maintenance Plan presented below is provided as the planned maintenance activities associated for the Term in accordance with the twenty nine (29) Annual Maintenance Periods comprised therein. Such Maintenance Plan shall be based on the typical cycles mentioned in Paragraph 1.1 and Table 20.1 above with some adjustment to reflect the peculiarities of hydroelectric equipment and industry practice.

Commencing from the Commercial Operation Date, the Maintenance Plan shall be as follows:

- (i) a Checkup of all seven (7) Generating Units at every other Annual Maintenance Period;
- (ii) a Partial Overhaul of all four (4) and three(3) Generating Units at an interval of six (6) Annual Maintenance Periods; and
- (iii) an Overhaul of each Generating Unit at an interval of twelve (12) Annual Maintenance Periods.

In the event that the initial portion of such period after the Commercial Operation Date is comprised in an Annual Maintenance Period that starts prior to the Commercial Operation Date, the maintenance plan for such period shall be in accordance with the maintenance activities that are required for the remaining duration of such Annual Maintenance Period.

Table 20.3 below shows the number of Generating Units affected by each type of maintenance activity, and the typical total annual maintenance duration in Unit-hours.

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**Table 20.3 Maintenance Plan**

Annual Maintenance Period	Routine	Checkup	Partial Overhaul	Overhaul	Facilities (including Line)	Planned Outage	Total annual Duration (unit-hours)
1	7					7	1400
2	7	7				7	2352
3	7						1008
4	7	7					1848
5	7						1008
6	7		4		7		2856
7	7		3				2448
8	7	7					1848
9	7						1008
10	7	7					1848
11	7			2			3168
12	7			3	7		4176
13	7			2			3168
14	7	7					1848
15	7						1008
16	7	7					1848
17	7						1008
18	7		4		7		2856
19	7		3				2268
20	7	7					1848
21	7						1008
22	7	7					1848
23	7			2			3168
24	7			3	7		4176
25	7			2			3168
26	7	7					1848
27	7						1008
28	7	7					1848
29	7						1008
<b>Average</b>						<b>3.37%</b>	<b>2065</b>

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### 1.5 Maintenance plan during the first year of operation after Commercial Operation Date

The maintenance plans during the first year of operation after Commercial Operation Date are described as follows:

- (i) The maintenance plans for the Initial First Period comprises the Generator Planned Outages that are associated with maintenance activities that normally occur during the startup phase and include troubleshooting, debugging, cure and fine-tuning activities, etc. The total duration associated with such maintenance activities is estimated on the basis of the provisions in Paragraph 5.2.2(a) of Part I of Schedules 1 and Paragraph 1.1.1(a) of Part I of Schedule 3 concerning the Generator Planned Outages during the Initial First Period. The number of expected total outage hours for the Generator Planned Outages during such first year of operation is one thousand four hundred (1400) Unit-hours.
- (ii) The maintenance plans for the Initial Second Period comprises the Generator Planned Outages that are associated with maintenance activities in addition to the Maintenance Plan, as all seven (7) Generating Units are subject to a Checkup, including Unit warrantee inspections. Such additional maintenance activities are necessary for verification and benchmarking purposes.

The number of expected total outage hours for the Generator Planned Outages during the Initial Second Period is two thousand three hundred and fifty two (2352) Unit-hours.

## 2. Exceptional Outage

Subject to compliance with Prudent Utility Practice, an event shall qualify as an Exceptional Outage when it is either a repair or a maintenance activity that could be expected to affect the Availability of one or more Generating Units for an extended period of time. In general such repair or maintenance activity shall have one or more of the following features:

- it concerns one or more major component(s) of the Project;
- it cannot reasonably be anticipated and the maintenance requirement results from an inspection, a failure or an accident;
- it requires long lead-time to procure spare parts or replacement parts which are not commonly stocked according to Prudent Utility Practice and which thus do not allow the repair to be completed in a short time.

Maintenance/repair events that may lead to an Exceptional Outage include:

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- Generator rewinding (stator or rotor);
- Simultaneous repair of several single phase transformers comprising the Generator Transformers;
- Gas Insulated Substation(GIS) repair.
- Hydraulic circuit repair (concrete or steel lined part);
- Intake structure repair.

Whenever a situation arises which may lead to an Exceptional Outage, the Generator shall inform EGAT immediately and shall endeavor to mitigate its consequence on the Availability of the Generator System. In case of a common mode failure affecting the operation of several Generating Units, mitigation measures shall include, as far as practical and consistent with Prudent Utility Practice, the postponement of all or part of the work until such time as the impact on the EGAT System can be minimized.

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## Part II: Maintenance Plan in respect of the EGAT Transmission Facilities

Part II of Schedule 20 shall present such planned maintenance activities regarding the EGAT Transmission Facilities that may affect the delivery of the electrical energy from the Generator System (the “EGAT Planned Outage”).

Due to the configuration of the Loei 2 Substation and the availability of a spare single phase transformer, the only EGAT Planned Outages that will affect the delivery of the electrical energy from the Generator System are the relevant planned maintenance activities associated with the 500 kV shunt reactor, in the event that such 500 kV shunt reactor is installed at the Loei 2 Substation in respect of the period when the Transmission Line is energized at 500 kV level, which shall require the outage of such transmission circuit to which the relevant shunt reactor is connected. This Part II of Schedule 20 shall not be relevant if such 500 kV shunt reactor is not installed at the Loei 2 Substation.

### 1 Maintenance cycle and activities for shunt reactor maintenance

Planned maintenance activities in respect of the 500 kV shunt reactor at the Loei 2 Substation are summarized in the table below.

**Table 20.4 Maintenance Cycles and Activities for one reactor at the Loei 2 Substation**

Type	Cycle	Duration	Maintenance Work	Remarks
Routine Maintenance	6 years	24 hours	DC. Resistance Measurement, Impedance at Low Voltage, Impedance at High Voltage, Insulation Test, Bushing Test, Insulation Oil Test, Surge Arrester Test, Calibrate Winding & Oil Temperature	All these maintenance activities are intended to be performed during the EGAT holidays.

### 2 Transmission Line Maintenance

The same provisions as set out for the Generator Transmission Line in Paragraph 1.3 of Part I of Schedule 20 shall apply for the EGAT Transmission Line.

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**Part III: Replacement of Electrical Devices**

With respect to: (i) electrical devices and/or instruments comprised in the Generator Protective System, the Generator Metering System, the Generator Communication System, the EGAT Protective System, the EGAT Metering System and the EGAT Communication System that have been installed for ten (10) years or more; and (ii) optical fiber that has been installed for fifteen (15) years or more, such devices and/or instruments shall have to be replaced by the respective Party at its own cost. At such time not less than one (1) year prior to reaching the respective time that any of such devices and/or instruments is required to be replaced, EGAT shall notify the Generator and both Parties shall meet and plan for the replacement of the relevant devices and/or instruments in order to minimize the effects of such replacement on the operation of the Generator System.

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Schedule 21

MATTERS RELATED TO THE GRID CODE

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Schedule 22**DRAW DOWN SCHEDULES**

This Schedule 22 sets out Generator's plan as estimated at the Execution Date of this Agreement to draw down the funding under the Financing Documents following the Financial Close Date for the construction of the Generator System. The draw down schedules provided herein are for information purpose only and subject to the revision by Generator upon the execution of the Financing Documents in accordance with Section 2.1.4 of this Agreement. All amounts are in either million Thai Baht or million US Dollars.

Year	Amounts drawn in Thai currency	Amounts drawn in US currency		Yearly Total in Thai Baht equivalent
		USD	Thai Baht equivalent	
2011	3,540	45	1,530	5,070
2012	4,990	63	2,142	7,132
2013	5,660	71	2,414	8,074
2014	5,530	70	2,380	7,910
2015	11,200	141	4,794	15,994
2016	10,980	138	4,692	15,672
2017	9,270	117	3,978	13,248
2018	5,240	66	2,244	7,484
<b>Total</b>	<b>56,410</b>	<b>711</b>	<b>24,174</b>	<b>80,584</b>

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Schedule 23LEGAL OPINION**Legal Opinion from the Minister of Justice of the Lao PDR  
(For the purposes of Section 1.5.1(f) of the Agreement)****LAO PEOPLE'S DEMOCRATIC REPUBLIC  
Peace Independence Democracy Unity Prosperity**

Ministry of Justice

Ref. No [ ]/MoJ

Date [ ]

**LEGAL OPINION****ON THE CONDITION PRECEDENT GOL DOCUMENTS,  
THE PPA, THE CONDITION PRECEDENT SECURITY DOCUMENTS, AND  
OTHER DOCUMENTS AS REFERRED TO HEREIN  
FOR THE XAYABURI HYDROELECTRIC POWER PROJECT**

1. This opinion is addressed to:
  - (a) Xayabur Power Company Limited (the "Generator");
  - (b) Ch. Karnchang Public Company Limited, PTT International Company Limited, Electricité du Laos, P.T. Construction & Irrigation Company Limited and other shareholders of the Generator (the Generator's Shareholders);
  - (c) Electricity Generating Authority of Thailand ("EGAT"); and
  - (d) the Lenders referred to in the Credit Facility Agreement under the Concession Agreement, as and when such Lenders and Credit Facility Agreement arise.
2. This opinion is issued in respect of:
  - (a) the concession agreement dated 29 October 2010 entered into between the Government of Lao People's Democratic Republic (the "GOL") represented by the Ministry of Planning and Investment and the Generator (the "**Concession Agreement**");
  - (b) the power purchase agreement dated [ ], entered into between EGAT and the Generator (the "**Power Purchase Agreement**" or the "**PPA**");
  - (c) the letter of undertaking dated [ ], issued to EGAT by the GOL represented by the Ministry of Planning and Investment (the "**GOL Undertaking**");
  - (d) the mortgage contract dated [ ], entered into between EGAT and the Generator, providing a second ranking security to EGAT as the Additional Security under the PPA (the "**Mortgage Contract**");

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- (e) the insurance assignment dated [ ], entered into between EGAT and the Generator, providing a second ranking security to EGAT (the “**Insurance Assignment**”);
- (f) the subordination agreement dated [ ], entered into between EGAT, the Security Agent and the Generator, for and on behalf of the Lenders (the “**Subordination Agreement**”);
- (g) the approval granted by the National Assembly of the Lao PDR (“the **National Assembly**”) on [ ] under number [ ] (the “**National Assembly Condition Precedent Lao PDR Approval**”), which approved the Concession Agreement and the form of the GOL Undertaking and granted all provisions and exemptions set forth therein, being:
- (i) its specific approval in respect of the matters referred to in the Concession Agreement which require the approval by the National Assembly;
  - (ii) its grant of specific exemptions and/or the making of amendments to those Inconsistent Lao PDR Laws (as defined in Clause 2(h) herein) which require the approval by the National Assembly; and
  - (iii) its specific approval and confirmation for the GOL, acting for and on behalf of the Lao PDR and represented by the “Ministry of Planning and Investment”, to enter into the Concession Agreement and to issue the GOL Undertaking;
- (h) those provisions of the Lao PDR Laws that are inconsistent with certain provisions of the Concession Agreement and/or the PPA (the “**Inconsistent Lao PDR Laws**”);
- (i) the licenses, approvals, consents and permits that the Generator is required to obtain under the Concession Agreement and/or the PPA other than those specific approvals that require the approval of the National Assembly (the “**Non National Assembly Condition Precedent Lao PDR Approvals**”), consisting of the Lao PDR Approvals (as defined in the GOL Undertaking), including such approvals identified in the Annex to this opinion;
- (j) the letter dated [ ] issued by the Prime Minister of the Lao PDR to the Ministry of Planning and Investment (the “**Prime Minister’s Letter**”), confirming to the Ministry of Planning and Investment that the GOL, acting for and on behalf of the Lao PDR:
- (i) has approved the terms of the Concession Agreement and the GOL Undertaking, including its Schedules and Annexes, as applicable; and
  - (ii) instructs the Ministry of Planning and Investment to represent the GOL to sign the Concession Agreement and any other documents and to

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issue to EGAT the GOL Undertaking, which the GOL is required to sign or issue in respect of each such document, as the case may be; and

- (k) the resolutions of the Board of Directors of the Generator held on [ ], as set out in the written extracts from the minutes of meetings and certified by the authorized directors of the Generator, authorizing the Generator to enter into: (i) the Concession Agreement with the GOL; (ii) the PPA, the Mortgage Contract and the Insurance Assignment with EGAT; (iii) the Credit Facility Agreement with the Lenders; and (iv) the Subordination Agreement with EGAT and the Security Agent (the “**Resolutions**”).
3. I confirm that, as the Minister of Justice of the Lao PDR, I have full legal power and authority to issue this opinion on behalf of the Ministry of Justice of the Lao PDR with regard to Lao PDR Laws and that all legislative and other actions required to authorize the issue by me to you of this opinion in my capacity as the Minister of Justice of the Lao PDR have been duly taken.
4. Unless otherwise defined herein, terms defined in the Concession Agreement and the PPA shall have the same meaning when used in this opinion, which is issued as a Condition Precedent to the effectiveness of the PPA. When used in this opinion:
- (a) “**Condition Precedent GOL Documents**” means the Concession Agreement and the GOL Undertaking;
- (b) “**Condition Precedent Security Documents**” means the Mortgage Contract, the Insurance Assignment and the Subordination Agreement;
- (c) “**Lao PDR Laws**” means the constitution, laws, decrees, regulations, notices, decisions, guidelines, treaties, ordinances, judgements, injunctions, writs, orders and rules of the Lao PDR, whether or not publicly known, and includes (whether or not publicly known) any interpretations of Lao PDR Laws or other binding instrument, requirement or decision of any Relevant Authorities or any Lao PDR court; and
- (d) “**Notary Law**” means the Notary Law No. 04/NA of 3 April 1992.
5. For the purposes of this opinion, I have examined:
- (a) the Concession Agreement;
- (b) the GOL Undertaking;
- (c) the National Assembly Condition Precedent Lao PDR Approval;
- (d) the Non National Assembly Condition Precedent Lao PDR Approvals;
- (e) the Power Purchase Agreement;
- (f) the Mortgage Contract;

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- (g) the Insurance Assignment;
- (h) the Subordination Agreement; and
- (i) the corporate documents of the Generator.

I have also perused and examined such other documents and made such investigations as I have considered necessary for the purposes of giving this opinion.

6. This opinion is confined to and given on the basis of Lao PDR Laws in force as at the date hereof. I have not investigated, and do not express or imply any opinion on, the laws of any other jurisdiction, and have assumed that no other such laws would affect any opinion stated herein.
7. I am of the opinion with regard to the GOL and its entering into the Condition Precedent GOL Documents that:
  - (a) the GOL, as the government of the Lao PDR, has the capacity, legal power and authority under Lao PDR Laws to execute and deliver the Condition Precedent GOL Documents for and on behalf of the Lao PDR and to exercise its rights and perform its obligations under the Condition Precedent GOL Documents;
  - (b) all necessary administrative and other actions required to be taken by the National Assembly, the GOL or any other Relevant Authorities to authorize the execution, delivery and performance by the GOL of the Condition Precedent GOL Documents have been duly taken;
  - (c) the National Assembly Condition Precedent Lao PDR Approval, which approved the Concession Agreement and the form of the GOL Undertaking and granted all provisions and exemptions set forth therein, has been granted at a duly and properly constituted session of the National Assembly;
  - (d) the Prime Minister's Letter has been validly issued by the Prime Minister of the Lao PDR and is a legal and valid confirmation and instruction under Lao PDR Laws to the Ministry of Planning and Investment, and that the Ministry of Planning and Investment has the power and has been duly authorized to represent the GOL for the purposes of entering into the Concession Agreement and issuing the GOL Undertaking, and entering into agreements in the form set out in any Schedule or Annex to the Concession Agreement and the GOL Undertaking or those agreements in such other form as may be determined by the GOL as being appropriate for the purposes of the Concession Agreement and the GOL Undertaking;
  - (e) the execution, delivery and performance by the GOL of the Condition Precedent GOL Documents do not and will not violate or contravene:

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- (i) any existing provision of Lao PDR Laws or any arbitral award or any court decision which is binding on the GOL, including the constitution of the Lao PDR and any Lao PDR Laws related to granting concession in the development and use of the natural resources of the Lao PDR to private companies; or
- (ii) any existing treaty, agreement or other instrument to which the GOL is a party or which is binding on the GOL including, but not limited to, the Agreement between the Kingdom of Thailand and the Government of the Lao PDR for the Promotion and Protection of Investments;
- (f) the Condition Precedent GOL Documents have been validly and properly executed by the GOL for and on behalf of the Lao PDR;
- (g) the obligations of the GOL under the Condition Precedent GOL Documents constitute legal, valid and binding obligations enforceable against it in accordance with their terms under the Lao PDR Laws, being under Lao PDR Laws the sovereign obligations of the Lao PDR carrying the full faith and credit of the Lao PDR;
- (h) none of the Condition Precedent GOL Documents contain any provision which is contrary to public policy in the Lao PDR or which is not in compliance with Lao PDR Laws other than those Inconsistent Lao PDR Laws, the application of which have been exempted by the National Assembly;
- (i) under the Lao PDR Laws, the claims of the Generator or, in the case of the GOL Undertaking, EGAT against the GOL will rank at least *pari passu* with the claims of all of its other unsecured and unsubordinated creditors;
- (j) the GOL is entitled under Lao PDR Laws and has received all necessary authorizations to agree to the dispute resolution procedures under the Condition Precedent GOL Documents and to waive any immunity for itself and its assets as provided thereunder;
- (k) to the best of my knowledge, after due inquiry of the GOL, the Ministry of Finance, the Ministry of Foreign Affairs, the Lao PDR courts and the Auditing Authority, there is no present, pending or threatened litigation or arbitral proceeding against the GOL either in the Lao PDR or abroad which might reasonably be expected to result in a material adverse change to the financial condition of the GOL or which might reasonably be expected to impair the ability of GOL to perform its obligations under the Condition Precedent GOL Documents; and
- (l) in any proceedings taken in the Lao PDR in relation to the Condition Precedent GOL Documents, the GOL will not be entitled to claim in relation to itself or any of its assets immunity from suit, attachment, execution or other legal process to the extent that its immunity in respect thereof has been expressly waived by it under the provisions of the Condition Precedent GOL

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Documents, which waiver provisions I confirm are valid and irrevocably binding on the GOL in accordance with their terms.

8. I am of the opinion with regard to the Generator and its entering into each of the Concession Agreement, the Power Purchase Agreement and the Condition Precedent Security Documents that:
- (a) the Generator, being a company duly incorporated under the Lao PDR Laws, such establishment of the Generator having been duly approved by the GOL and all Inconsistent Lao PDR Laws in relation thereto having been duly exempted by the National Assembly, pursuant to which the Generator shall be legally entitled to carry out all business in Lao PDR, including without limitation to: (i) be a party to the Concession Agreement; (ii) receive the relevant concession from the GOL; and (iii) acquire and own assets in the Lao PDR in accordance with the Generator's objectives without any restrictions;
  - (b) the Generator has corporate power and authority to enter into and to perform its respective obligations under the Concession Agreement, the PPA and the Condition Precedent Security Documents;
  - (c) the Generator has taken all necessary corporate actions under the Lao PDR Laws to authorize the execution and delivery of the Concession Agreement, the PPA and the Condition Precedent Security Documents and the performance by the Generator of its respective obligations under the Concession Agreement, the PPA and the Condition Precedent Security Documents;
  - (d) In connection with the execution of the Concession Agreement, the PPA and the Condition Precedent Security Documents by the Generator and the performance by the Generator of its respective obligations under the Concession Agreement, the PPA and the Condition Precedent Security Documents:
    - (i) the obligations assumed by the Generator under the Concession Agreement, the PPA and the Condition Precedent Security Documents constitute legal, valid and binding obligations of the Generator enforceable in the Lao PDR under the Lao PDR Laws in accordance with their terms;
    - (ii) neither the execution or the delivery of the Concession Agreement, the PPA and the Condition Precedent Security Documents nor the exercise by the Generator of any of its respective rights or the performance by the Generator of any of its respective obligations thereunder will contravene, result in a breach of or constitute a default under any provision contained in any of the documents provided in the Annex or any of the licenses, approvals, consents and permits that the Generator is required to obtain under the Concession Agreement and/or the PPA or any judgment, decree or order binding on the Generator or in any

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- law, rule, regulation or decree of the Lao PDR to which the Generator or any of its assets in the Lao PDR are subject;
- (iii) no further acts, conditions and things are required by Lao PDR Laws other than acquiring those relevant consents specified in the Concession Agreement, the PPA and the relevant consents and/or approvals provided in the Annex; and
  - (iv) the exercise by EGAT of any of its rights under the PPA and the Condition Precedent Security Documents, including without limitation such rights to acquire the Generator Assets and such rights to enforce the EGAT Security, and the performance by EGAT of any of its obligations under the PPA and the Condition Precedent Security Documents will not violate any applicable Lao PDR Laws;
- (e) there are no actions, suits, or proceedings pending or threatened with respect to the Generator or the Project in the Lao PDR;
  - (f) the meeting of the Board of Directors of the Generator held on [ ] was duly and properly convened and conducted, and the Resolutions as defined in Clause 2(k) of this letter is a true record of a resolution passed at such meeting and since the date of such meeting no action has been taken which limits or modifies or nullifies the Resolutions or the authority of the Generator granted by the Resolutions;
  - (g) the submissions to jurisdiction, appointments of process agents, consents and waivers of immunity by the Generator in the Concession Agreement, the PPA and the Condition Precedent Security Documents, as applicable, are valid and irrevocable under the Lao PDR Laws and neither the Generator nor any of its assets, property or undertaking is entitled to immunity from suit, execution, attachment or other legal process under, pursuant to or in accordance with Lao PDR Laws;
  - (h) all payments to be made by the Generator under the PPA are permitted under the Lao PDR Laws to be made in full, free and clear of and without any deduction of or withholding for or on account of any taxes, levies, duties, charges, fees, deductions or withholding of any nature whatsoever in the Lao PDR and the entry into, performance and enforcement of the PPA and the Condition Precedent Security Documents by EGAT will not result in EGAT being or being deemed to be resident, domiciled or carrying on business in the Lao PDR so as to be subject to any taxes in the Lao PDR in respect of revenues or profits wheresoever arising as a result of such residence, domicile or carrying on of business;
  - (i) terms and conditions regarding damages and compensations, including without limitation terms and conditions regarding liquidated damages, damages upon the occurrence of force majeure, payments upon termination of the Concession Agreement and the PPA, indemnifications and any other damages, and limitations on damages as provided for in the Concession

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Agreement, the PPA and the Condition Precedent Security Documents, as the case may be, are permitted under Lao PDR Laws; and

- (j) to the extent that the Lao PDR courts would have jurisdiction in respect thereof, the provisions of the PPA and the Condition Precedent Security Documents are of the type which are recognized and enforced in the Lao PDR courts.

9. I am also of the opinion that:

- (a) the granting by the National Assembly of the National Assembly Condition Precedent Lao PDR Approval has amended or otherwise exempted from applying to the Concession Agreement and the PPA the Inconsistent Lao PDR Laws, which would otherwise have been inconsistent with certain of the provisions of the Concession Agreement or the PPA, so as to remedy those inconsistencies;
- (b) all licenses, approvals, consents and permits that the Generator is required to obtain under the Concession Agreement and/or the PPA have been either duly approved by the National Assembly or validly issued by the Relevant Authorities which issued the same and all such relevant licenses, approvals, consents and permits provided to the Generator are valid, subsisting and in full force and effect;
- (c) the Lao PDR courts will:
  - (i) give effect to the choice of the Laws of Lao PDR as the governing law of the Concession Agreement and the Mortgage Contract; and the choice of the laws of Thailand as the governing law of the PPA, the Insurance Assignment, the Subordination Agreement and the GOL Undertaking; and
  - (ii) give effect to the provisions of Clause 18.1 of the Concession Agreement regarding the possible application of Singapore law to settle any issue of law which is not definitively settled by applicable provisions and established principles of the Laws of Lao PDR;
- (d) the Lao PDR has acceded to the Convention on the Recognition and Enforcement of Foreign Arbitral Awards concluded at New York on 10 June 1958 (the “**New York Convention**”) and has duly implemented the New York Convention in the Lao PDR so as to enable arbitration decisions or awards made in other states which have acceded to the New York Convention (including decisions or awards made in an arbitration in Singapore under the UNCITRAL arbitration rules or, as the case may be, an arbitration in Thailand under the arbitration rules as issued by the Arbitration Institute Office of the Judiciary of Thailand, for as long as Singapore or Thailand, as the case may be, remain as states which have acceded to the New York Convention) to be enforced in the Lao PDR by the Lao PDR courts subject to those decisions or awards being enforceable in the Lao PDR in accordance with the New York

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Convention and the terms of the Lao PDR's accession to the New York Convention, without the Lao PDR courts insisting upon or allowing the party against whom the decisions or award has been made to seek a re-hearing of the relevant dispute before a court of the Lao PDR;

- (e) in order to ensure the legality, validity, enforceability and admissibility in evidence of the Condition Precedent GOL Documents, the PPA and the Condition Precedent Security Documents, it will not be necessary under Lao PDR Laws that:
    - (i) the Condition Precedent GOL Documents, the PPA and the Condition Precedent Security Documents, as the case may be, be notarized by the Notary Office of the Ministry of Justice of the Lao PDR pursuant to the Notary Law or be subjected to any other formality or that any filings, registrations, consents, approvals or similar formalities be effected in relation to any of them, with any court or other authority of the Lao PDR or any other third party; or
    - (ii) any stamp duty or other similar document or registration duty or tax be paid in the Lao PDR on or in relation to any of the Concession Agreement, the PPA and the Condition Precedent Security Documents;
  - (f) as a consequence of the exemption granted by the National Assembly of the Lao PDR in respect thereof pursuant to National Assembly Resolution, no Lao translation in respect of any of the Condition Precedent Document, the PPA and the Condition Precedent Security Documents is required with respect to its registration and certification and for its admissibility in evidence in the courts of the Lao PDR;
  - (g) with respect to the interpretation and/or application of the Law on Business Turnover Tax, the Law on Value-Added Tax or the law on any other kinds of taxes of similar nature in the Lao PDR in connection with the purchase and receipt of generating capacity and/or electrical energy in association with the PPA, EGAT shall be fully exempted from paying any and all of such Business Turnover Tax, Value-Added Tax or any other kinds of taxes of similar nature that may otherwise be charged or arising against EGAT throughout the Term of the PPA; and
  - (h) there are no unpublished laws, decrees, regulations, notification, opinions or decisions of the courts of the Lao PDR which would affect any of the opinions expressed herein.
10. This opinion is addressed to the Generator, the Generator's Shareholders, EGAT and the Lenders and may be relied upon by the Generator, the Generator's Shareholders, EGAT and the Lenders (and their successors and assigns) and their respective legal advisers accordingly. This opinion is not to be transmitted, nor to be relied upon, by any other person or used for any other purpose.

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Vientiane [ ]

**Minister of Justice**

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*[Handwritten initials]*

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**ANNEX**  
**The Document**

- (a) The Concession Agreement dated 29 October 2010.
- (b) The Power Purchase Agreement dated [ ].
- (c) The GOL Undertaking dated [ ].
- (d) The Mortgage Contract dated [ ].
- (e) The Insurance Assignment dated [ ].
- (f) The Subordination Agreement dated [ ].
- (g) The National Assembly Resolution number [ ], dated [ ].
- (h) The Permits referred to in Annex H of the Concession Agreement.
- (i) The Prime Minister's Letter dated [ ] issued by the Prime Minister of the Lao PDR to the Ministry of Planning and Investment.
- (j) The Resolutions of the Board of Directors of the Generator held on [ ] and other corporate documents.
- (k) The Generator's Foreign Investment License No. [ ], dated [ ].
- (l) The Generator's Tax Registration Certificate No. [ ], dated [ ].
- (m) Bank of the Lao PDR Authorization Letter No. [ ], dated [ ].
- (n) Acknowledgement of the Lao National Mekong Commission and/or the Mekong River Commission and/or Mekong River Commission Joint Committee.
- (o) The Lease Agreement dated [●].

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Schedule 24GOL UNDERTAKING

Date: [●]

Parties	GOL and EGAT
GOL	THE GOVERNMENT OF THE LAO PEOPLE'S DEMOCRATIC REPUBLIC including all Lao Governmental Authorities and acting for and on behalf of the Lao PDR (together called the "GOL"), represented by the Ministry of Planning and Investment and
EGAT	ELECTRICITY GENERATING AUTHORITY OF THAILAND (called "EGAT")
Recitals	<p><b>A</b> The GOL and the Xayaburi Power Company Limited have entered into a concession agreement dated October 29, 2010 (the "<b>Concession Agreement</b>") (Xayaburi Power Company Limited and its successors and permitted assigns being called the "<b>Company</b>") by which:</p> <p>(a) the GOL has made, granted and issued to the Company the concession and the approvals to build, own and operate the Xayaburi Hydroelectric Power Project (the "<b>Project</b>") in the Lao PDR; and</p> <p>(b) the Company will plan, design, construct and commission the Project to provide generating capacity and electricity and will own and operate the Project.</p> <p><b>B</b> EGAT and the Company have entered into a power purchase agreement dated [●] (the "<b>EGAT PPA</b>") by which the Company has agreed to supply to EGAT:</p> <p>(a) generating capacity of the Project; and</p> <p>(b) electricity generated by the Project,</p> <p>as more particularly provided in the EGAT PPA.</p> <p><b>C</b> The GOL has approved the EGAT PPA referred to in Recital B as the power purchase agreement between the Company and EGAT as</p>



referred to in the Concession Agreement and for the purposes thereof.

**D** The Company and Electricite du Laos (“**EdL**”) have entered into a power purchase agreement dated [●] (the “**EdL PPA**”) by which the Company has agreed to supply to EdL:

- (a) generating capacity of the Generator-EdL System; and
  - (b) electricity generated by the Generator-EdL System,
- as more particularly provided in the EdL PPA.

**E** By entering into this GOL Undertaking, the GOL:

- (a) makes certain representations regarding the legal status under the Laws of the Lao PDR of the EGAT PPA and of the sale of electrical energy from the Project under the EGAT PPA; and
- (b) acknowledges that EGAT has entered into the EGAT PPA on the basis of receiving the benefit of the GOL’s acknowledgements, confirmations and agreements contained in this GOL Undertaking.

**Operative provisions:**

**1. Unless otherwise specified herein:**

- (a) the following terms shall have the meanings as follows:
  - (i) “**Company Termination Event**” shall have the meaning set forth in Clause 12.2 of the Concession Agreement;
  - (ii) “**Concession Period**” shall have the meaning set forth in Clause 1.1 of the Concession Agreement;
  - (iii) “**Contractor**” shall have the meaning set forth in Clause 1.1 of the Concession Agreement;
  - (iv) “**Designated Assignee**” means either an EGAT Designated Assignee or a GOL Designated Assignee, as applicable;

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- (v) “**Effective Date**” shall have the meaning set forth in Clause 1.1 of the Concession Agreement;
- (vi) “**Force Majeure**” shall have the meaning set forth in Clause 1.1 of the Concession Agreement or Section 11 of the EGAT PPA, as the context requires;
- (vii) “**GOL Designated Assignee**” means the company incorporated as a company limited by shares under and in accordance with the Laws of the Lao PDR, being used by the GOL as a vehicle to acquire the Generator Assets pursuant to the Concession Agreement which at the time of such acquisition satisfies Clause 7 of this GOL Undertaking;
- (viii) “**GOL Direct Payment**” shall have the meaning set forth in Clause 5(k) of this GOL Undertaking;
- (ix) “**GOL Termination Payment**” means the amount that is payable by the GOL to the Company in respect of the termination of the Concession Agreement, determined in accordance with Clause 12.7.2 of the Concession Agreement;
- (x) “**GOL Undertaking**” or “**this GOL Undertaking**” means the whole of this document described as the GOL Undertaking including the Form of EGAT Acceptance of the GOL Undertaking set forth in Schedule 1 hereto;
- (xi) “**Government Termination Event**” shall have the meaning set forth in Clause 12.3 of the Concession Agreement;
- (xii) “**HPP**” shall have the meaning set forth in Clause 1.1 of the Concession Agreement;
- (xiii) “**Industry Expert**” means any leading power company that enjoys an international reputation and is experienced in the operation and maintenance of hydroelectric power generation and transmission facilities of same or similar capacity to the Generator System and has the appropriate technical capability that is required or expected to be required for the operation and maintenance of the Generator System;
- (xiv) “**Lao PDR Approvals**” means any grant, license, lease, approval, consent, permit, concession, waiver, or exemption which are required to be granted or issued to the Company in respect of the Project at any time

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during the Concession Period by any Lao Governmental Authority, including:

- (1) all Permits under the Concession Agreement; and/or
  - (2) all Governmental Approvals in respect of any Lao Governmental Authority under the EGAT PPA;
- (xv) **“Operation and Maintenance Contract”** shall have the meaning set forth in Clause 1.1 of the Concession Agreement; and
- (xvi) **“Permits”** shall have the meaning set forth in Clause 1.1 of the Concession Agreement;
- (b) the following terms shall have the meanings as set forth in the EGAT PPA:
- (i) “Additional Security”;
  - (ii) “Assigned Rights and Obligations”;
  - (iii) “Commercial Operation Date” or “COD”;
  - (iv) “EGAT Designated Assignee”;
  - (v) “EGAT System”;
  - (vi) “EGAT Transmission Facilities”;
  - (vii) “Event of Default”;
  - (viii) “Financing Documents”;
  - (ix) “Generator Assets”;
  - (x) “Generator Event of Default”;
  - (xi) “Generator System”;
  - (xii) “Generator-EdL System”
  - (xiii) “Governmental Approval”;
  - (xiv) “Insurance Assignment”;
  - (xv) “Interconnection Facilities”;

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- (xvi) "Lao Governmental Authorities";
  - (xvii) "Lao Political Force Majeure";
  - (xviii) "Laws";
  - (xix) "Lease Agreement";
  - (xx) "Lender";
  - (xxi) "Person";
  - (xxii) "Site";
  - (xxiii) "Subordination Agreement";
  - (xxiv) "Term Termination Date";
  - (xxv) "Termination Payment"; and
  - (xxvi) "Thai Governmental Authorities";
- (c) any reference in this GOL Undertaking to any agreement shall be construed, at any particular time, as including a reference to the relevant agreement as it may have been amended, modified, supplemented, novated, re-executed or re-established.
2. The GOL enters into and EGAT accepts this GOL Undertaking on the basis that it applies to the EGAT PPA and the Concession Agreement either of which as amended from time to time provided that neither the GOL nor EGAT will consent, where it has a right to withhold that consent, to any change to the EGAT PPA or to the Concession Agreement, as the case may be, if thereby the interests of the other of them under this GOL Undertaking are or are expected to be materially prejudiced by that change.
3. This GOL Undertaking shall:
- (a) become effective and binding upon the GOL and EGAT in accordance with its terms if and when it: (i) has been executed by the GOL; and (ii) EGAT executes and delivers to the GOL the acceptance document in the form attached as Schedule 1 to this GOL Undertaking, duly dated; and
  - (b) be deemed dated on the date it becomes so effective and binding.

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4. The GOL makes the representations and gives the irrevocable confirmations and agreements appearing in this GOL Undertaking in consideration for the execution of the EGAT PPA on the part of EGAT and in recognition that:
- (a) EGAT has relied upon the representations, confirmations and agreements of the GOL set forth in this GOL Undertaking in making its decision to execute the EGAT PPA;
  - (b) by entering into the EGAT PPA, EGAT has become dependent upon the successful development and operation of the Generator System in order to satisfy the needs of Thailand for new sources of electrical power;
  - (c) pursuant to the EGAT PPA, EGAT is required to construct the EGAT Transmission Facilities at a cost that EGAT will not be able to recover fully absent the successful development, construction, commissioning and operation of the Generator System; and
  - (d) once one or more generating units of the Generator System are commissioned and become operational, the Generator System will be electrically and operationally part of the integrated EGAT System.
5. The GOL hereby expressly represents and irrevocably confirms to and agrees with EGAT that:
- (a) the EGAT PPA satisfies the requirements of the Concession Agreement and the Laws of the Lao PDR and, subject to satisfaction of applicable legal requirements regarding the effectiveness thereof, the EGAT PPA shall be given full effect within the Lao PDR and shall be enforced within the Lao PDR by the courts of the Lao PDR and, to the extent permitted or otherwise required by the Laws of the Lao PDR, all other Lao Governmental Authorities;
  - (b) subject to satisfaction of the applicable legal requirements regarding the effectiveness of the EGAT PPA, the rights and obligations of the Company and EGAT under the EGAT PPA do not breach the Laws of the Lao PDR and the provisions of the EGAT PPA the application of which relates to or requires enforcement within the Lao PDR are able to be enjoyed and enforced within the jurisdiction of the Lao PDR by the Company as against EGAT and by EGAT as against the Company, including specifically:
    - (i) the Additional Security, the Insurance Assignment and the Subordination Agreement;

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- (ii) subject to paragraph (h) hereof and subject to the exercise of such rights and obligations by EGAT and the Company in accordance with the applicable terms and conditions of the EGAT PPA, and as either an alternative contractual remedy to termination due to the occurrence of a Generator Event of Default or as otherwise required in order to ensure the continued and uninterrupted technical availability of the Generator System to provide electrical energy to EGAT, the occupation of and assumption of responsibility on the part of EGAT for the operation, maintenance and/or repairs for all or part of the Generator System in accordance with Section 10.3 of the EGAT PPA (the “**Step-in Rights**”);
- (iii) subject to the agreements between the GOL and EGAT set forth in this GOL Undertaking and to compliance in all respects with the provisions of subparagraphs (i) to (iv) of Clause 5(j) hereof, the acquisition by EGAT of the Generator Assets as provided for in the EGAT PPA and in accordance with the terms and conditions of the EGAT PPA due to an Event of Default or a Force Majeure under the EGAT PPA pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 thereof; and
- (iv) the waiver by EGAT and the Company of any and all claims of immunity as set forth in Section 20 of the EGAT PPA;
- (c) upon the Concession Agreement being duly executed and becoming fully effective, the implementation by the Company of its obligations under the Concession Agreement in accordance with the requirements applicable thereto will not breach any of the Laws of the Lao PDR (including without limitation the environmental requirements of the Laws of the Lao PDR) which are in existence on the Effective Date of the Concession Agreement;
- (d) any requirement under the new Laws of the Lao PDR coming into force after the Effective Date of the Concession Agreement that adversely impacts the financial position of the Company shall constitute a change in the Laws of the Lao PDR and thereby a remedy is to be made by the GOL to the Company in accordance with the provisions of the Concession Agreement;
- (e) the GOL entered into a Lease Agreement with the Company on [ ] and, no later than the date on which the Effective Date occurs under the Concession Agreement, the GOL shall have issued to the Company all of the Lao PDR Approvals then required for the Company to obtain access to, possess and use the Site as required for the Company to exercise its rights and to fully perform

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its obligations under the Concession Agreement, including its rights and obligations thereunder to perform its obligations under the EGAT PPA;

- (f) with respect to the Additional Security, the Insurance Assignment and the Subordination Agreement, the GOL agrees that:
- (i) its written consent to each such document, as provided in, referred to in or otherwise required by Section 2.1.2(f) of the EGAT PPA or otherwise required pursuant to the Laws of the Lao PDR, shall be granted by the GOL substantially in such form set forth in Part IV of Schedule 25 of the EGAT PPA without reservation provided that the Additional Security, the Insurance Assignment and the Subordination Agreement are substantially in the forms set forth in Part I, Part II and Part III of Schedule 25 of the EGAT PPA, respectively, or otherwise are in forms which are reasonably satisfactory to the GOL;
  - (ii) upon each being duly executed and delivered by the parties thereto and after having obtained the GOL's written consent thereto as provided in, referred to in or otherwise required by Section 2.1.2(f) of the EGAT PPA:
    - (A) the obtaining of that consent will automatically confirm that the Additional Security, the Insurance Assignment and the Subordination Agreement so consented to comply with the requirements of the Laws of the Lao PDR referred to in subparagraph (i) above;
    - (B) the GOL shall cause each such document (to the extent the same is required to be so registered by the Laws of the Lao PDR) to be properly and promptly registered with the State Assets Management Department of the Ministry of Finance of the Lao PDR upon proper application for registration thereof by the Company or otherwise with the appropriate Lao Governmental Authorities; and
    - (C) after each having been properly registered with the State Assets Management Department of the Ministry of Finance of the Lao PDR or otherwise with the appropriate Lao Governmental Authorities, if and as required by the Laws of the Lao PDR, each such document shall be given full effect within the Lao PDR and shall be enforced within the Lao PDR by the courts of the Lao

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PDR and, to the extent permitted or otherwise required by the Laws of the Lao PDR, all other Lao Governmental Authorities;

- (g) provided that: (i) EGAT exercises its Step-in Rights in accordance with the terms and conditions of the EGAT PPA as of the date hereof and applicable thereto; and (ii) EGAT exercises such Step-in Rights in compliance with all applicable Lao PDR laws, then:
- (i) the GOL does not have and will not at the relevant time have any objection to EGAT exercising its Step-in Rights in accordance with the requirements set forth in Section 10.3 of the EGAT PPA;
  - (ii) the courts of the Lao PDR will give effect to and enforce any such exercise by EGAT of its Step-in Rights;
  - (iii) the GOL will not prevent or otherwise hinder EGAT from exercising its Step-in Rights in accordance with the terms and conditions applicable thereto;
  - (iv) to the extent permitted or otherwise required by the Laws of the Lao PDR, the GOL shall cause other appropriate Lao Governmental Authorities to recognize, give effect to and enforce the exercise by EGAT of such Step-in Rights as are not disputed or that have been disputed by the Company but have been resolved in accordance with the requirements of the EGAT PPA; and
  - (v) for the purposes of the privileges related to tax application or exemptions that the GOL has granted to the personnel related to the Project under Clause 10.7 of the Concession Agreement, for so long as EGAT is exercising those Step-in Rights, EGAT shall be regarded as a Contractor under the Concession Agreement and its employees who work in the Lao PDR during that period shall be entitled of the tax privileges specified thereunder;
- (h) with respect to any period during which: (i) EGAT exercises its Step-in Rights in accordance with the terms and conditions of the EGAT PPA as of the date hereof and applicable thereto; and (ii) EGAT exercises such Step-in Rights in compliance with all applicable Lao PDR laws, then:
- (i) the exercise by EGAT of such Step-in Rights and EGAT's occupation and assumption of responsibility for operation, maintenance and/or

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repairs for all or part of the Generator System arising in respect thereof will not constitute:

- (A) a transfer of the ownership of the Generator System from the Company to EGAT; or
  - (B) an assignment by the Company to EGAT or an assumption by EGAT of any of the Company's contractual and legal obligations as the owner of the Generator System to the GOL under the Concession Agreement; and
- (ii) EGAT shall not by the exercise of such Step-in Rights become a party to the Concession Agreement and shall not thereby assume any of the Company's responsibilities to the GOL as the owner of the Generator System and a party to the Concession Agreement for satisfying the terms and conditions of the Concession Agreement and the Lease Agreement and for complying with the Lao PDR Approvals and the Laws of the Lao PDR applicable to the Company and the Generator System as required thereby; provided, however, that nothing in this paragraph (ii) constitutes a release or waiver by the GOL of EGAT from the requirement that all activities of EGAT within the Lao PDR must comply with the applicable Laws of the Lao PDR, including all activities of EGAT within the Lao PDR taken related to the exercise by EGAT of such Step-in Rights;
- (i) to the extent permitted or otherwise required by or provided for under the Laws of the Lao PDR, the courts of the Lao PDR, to the extent that they have jurisdiction, and relevant Lao Governmental Authorities shall give effect to and enforce the exercise by EGAT and the Company within the Lao PDR of their respective contractual rights under the EGAT PPA as are not disputed by the other of them or that have been disputed but have been resolved in accordance with the requirements of the EGAT PPA in respect of, in either such case, the acquisition by EGAT of the Generator Assets as are either permitted or required to be acquired by EGAT as provided for in the EGAT PPA pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 thereof;
- (j) in the event that EGAT notifies the GOL that EGAT is exercising its right or satisfying its obligations to acquire, own, operate and maintain the Generator Assets as are either permitted or required to be acquired by EGAT through the EGAT Designated Assignee pursuant to the EGAT PPA in accordance with Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 thereof and provided that:

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- (i) the exercise of such rights or the performance of such obligations on the part of EGAT does not involve an unresolved dispute under the EGAT PPA;
- (ii) if such acquisition is to occur prior to the Commercial Operation Date, the EGAT Designated Assignee is a company in which an Industry Expert, directly or indirectly, holds at least 35% of the total equity shareholding in circumstances where that Industry Expert shareholder has agreed to provide appropriate technical services to it;
- (iii) if such acquisition is to occur on or after the Commercial Operation Date, the EGAT Designated Assignee either:
- (A) has as one of its shareholders an Industry Expert holding, directly or indirectly, at least 15% of the total equity shareholding in circumstances where that Industry Expert shareholder has agreed to provide appropriate technical services to it; or
- (B) has engaged, in accordance with the terms of an Operating and Maintenance Contract reasonably acceptable to the GOL, an Industry Expert to be responsible for operating and maintaining the entirety of the Generator System in accordance with the requirements of the Concession Agreement until the expiration of the Concession Period; and
- (iv) the Company and the EGAT Designated Assignee have first executed an assignment, assumption and release agreement in respect of the Concession Agreement and other matters in the form set forth in Annex A to this GOL Undertaking with such amendments thereto as are necessary to complete that document in that form or otherwise in a form which is reasonably acceptable to the Company, EGAT and the GOL (the “**CA Assignment, Assumption and Release Agreement**”),
- then the GOL shall treat any conditions which would otherwise have been required to be complied with under the Concession Agreement to permit such an acquisition and for such acquisition to be effective as having been complied with to its satisfaction and:
- (v) shall execute the CA Assignment, Assumption and Release Agreement and take such other actions as are required under the Concession Agreement for the EGAT Designated Assignee to acquire the Generator Assets and to be substituted for the Company in respect of the

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Concession Agreement, the Lease Agreement, and all relevant Lao PDR Approvals;

(vi) agrees that the CA Assignment, Assumption and Release Agreement and the Concession Agreement shall be and remain effective in accordance with the terms and conditions set forth therein; and

(vii) subject to the CA Assignment, Assumption and Release Agreement being duly executed as aforesaid, agrees that:

(A) the GOL will honour, satisfy, comply with, give effect to and otherwise extend to the EGAT Designated Assignee in respect of and as the substitute of the Company under the Concession Agreement all of the benefits to which it is contractually entitled regarding those terms and conditions that are set forth as covenants, undertakings, representations and other obligations of the GOL (and the Lao Governmental Authorities and other governmental institutions which it comprises) under the Concession Agreement and any other legal instrument applicable to the Company and which is related thereto;

(B) upon the occurrence of the date on which the assignment, assumption and release referred to in the CA Assignment, Assumption and Release Agreement is to take effect, such date being referred to as the Effective Date in the CA Assignment, Assumption and Release Agreement, the EGAT Designated Assignee shall become a party to the Concession Agreement in lieu of the Company; and

(C) upon becoming a party to the Concession Agreement as referred to in subparagraph (B) above, the EGAT Designated Assignee shall be entitled to benefit from and enjoy all of the rights of, and be subject to the obligations of, the Company under the Concession Agreement,

(k) in the event that:

(i) upon the termination of the EGAT PPA following the occurrence of a Generator Event of Default or a Lao Political Force Majeure EGAT elects to receive the Termination Payment from the Company rather than to acquire the Generator Assets pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 of the EGAT PPA;

- (ii) following subparagraph (i) above and as a consequence of the occurrence of a Company Termination Event for which the GOL elects to terminate the Concession Agreement or a Government Termination Event or a Force Majeure event under the Concession Agreement, the Concession Agreement is terminated as permitted by Clause 8(b) of this GOL Undertaking and, where applicable, the GOL is required to pay to the Company the GOL Termination Payment pursuant to Clause 12.7.2 of the Concession Agreement;
- (iii) at the time the GOL is to pay the Company the GOL Termination Payment as referred to under subparagraph (ii) above part or all of the Termination Payment that is due and payable by the Company to EGAT as referred to under subparagraph (i) above remains owed, due and unpaid; and
- (iv) provided that after EGAT receives the GOL Direct Payment referred to herein in an amount that satisfies all amounts that are due and payable by the Company to EGAT, EGAT will release and discharge the Additional Security and the Insurance Assignment,

the GOL agrees that at the request in writing of EGAT, made to the GOL and copied to the Company no later than fourteen (14) days prior to the date on which the GOL Termination Payment is to be made by the GOL (such date being as notified by the GOL in accordance with Clause 5(l) of this GOL Undertaking), the GOL shall pay the amount that is the lesser of: (aa) the remaining portion of the GOL Termination Payment in excess of the portion thereof that is due and payable to the Lenders by the Company under or in respect of the Financing Documents; and (bb) that portion of the Termination Payment that remains owing and due from the Company to EGAT under the EGAT PPA (the “**GOL Direct Payment**”) directly to EGAT (to such account as EGAT may notify to the GOL for that purpose); provided that after EGAT receives the GOL Direct Payment referred to herein in an amount that satisfies all amounts that are due and payable by the Company to EGAT, EGAT will release and discharge the Additional Security and the Insurance Assignment;

- (l) for the purposes of Clause 5(k) of this GOL Undertaking:
  - (i) the GOL agrees that it will promptly notify EGAT of the date on which the GOL Termination Payment is to be made by it under the Concession Agreement and in any event the GOL shall notify EGAT in sufficient time in advance in order to enable EGAT to provide the notice to request

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- the GOL to pay to EGAT the GOL Direct Payment pursuant to Clause 5(k) hereof; and
- (ii) the request made by EGAT under Clause 5(k) hereof shall certify that the EGAT PPA has been terminated and shall specify the amount of the Termination Payment that is owed, due and unpaid to EGAT by the Company;
  - (m) with respect to the interpretation and/or application of the Law on Business Turnover Tax, the Law on Value-Added Tax or the law on any other kinds of taxes of similar nature in the Lao PDR in connection with the purchase and receipt of generating capacity and/or electrical energy in association with the EGAT PPA, EGAT solely in its capacity as the power off-taker under the EGAT PPA shall be fully exempted from paying any and all of such Business Turnover Tax, Value-Added Tax or any other kinds of taxes of similar nature that may otherwise be charged or arising against EGAT solely in its capacity as the power off-taker under the EGAT PPA throughout the Term of the EGAT PPA;
  - (n) the GOL will not do or fail to do anything which will cause the termination or suspension of the Lao PDR's accession to the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards made at New York on 10 June 1958 (the "**New York Convention**") and the GOL will ensure that it continues to implement the New York Convention in the Lao PDR in accordance with its original accession to the New York Convention and the Laws of the Lao PDR;
  - (o) for so long as the EGAT PPA remains in effect, the GOL and all Lao Governmental Authorities shall not grant any Governmental Approval or take any other action or commit any omission that would authorize, permit or otherwise allow and shall, to the extent permitted by the Laws of the Lao PDR, take such actions as are available to the GOL and the Lao Governmental Authorities to prevent the interconnection of the Generator System to transmission systems or facilities other than the EGAT System without having obtained the prior written consent of EGAT;
  - (p) for so long as the EGAT PPA remains in effect, the GOL shall fully comply with and meet its obligations and commitments under the Concession Agreement, including but not being limited to Clause 6.5 thereof;
  - (q) in the event that any part of the Interconnection Facilities is constructed either by the GOL or at the GOL's cost, the Company shall be entitled to deliver

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electrical energy to the EGAT System via the Interconnection Facilities in accordance with the EGAT PPA without any restriction attributable thereto; and

- (r) neither the Company nor the assets of the Company shall be:
- (i) nationalized or expropriated by the GOL or any of its Lao Governmental Authorities; or
  - (ii) granted any immunity in the Lao PDR from legal action or proceedings on the basis of sovereignty.
6. The representations, confirmations and agreements of the GOL in this GOL Undertaking apply only to the exercise and enforcement on behalf of EGAT of its rights pursuant to the EGAT PPA.
7. In the event that the EGAT PPA has not been terminated and the GOL notifies EGAT that the GOL intends to acquire the rights and obligations of the Company under the EGAT PPA in association with its acquisition of the Generator Assets through the GOL Designated Assignee as permitted by Clause 8(b) of this GOL Undertaking and provided that:
- (a) the exercise of such rights or the performance of such obligations on the part of the GOL does not involve an unresolved dispute under the EGAT PPA;
  - (b) if such acquisition is to occur prior to the Commercial Operation Date, the GOL Designated Assignee is a company in which an Industry Expert, directly or indirectly, holds at least 35% of the total equity shareholding in circumstances where that Industry Expert shareholder has agreed to provide appropriate technical services to it;
  - (c) if such acquisition is to occur on or after the Commercial Operation Date, the GOL Designated Assignee either:
    - (A) has as one of its shareholders an Industry Expert holding, directly or indirectly, at least 15% of the total equity shareholding in circumstances where that Industry Expert shareholder has agreed to provide appropriate technical services to it; or
    - (B) has engaged, in accordance with the terms of an Operating and Maintenance Contract reasonably acceptable to EGAT, an Industry Expert to be responsible for operating and maintaining the entirety of the Generator System in accordance with the requirements of the

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Concession Agreement until the expiration of the Concession Period;  
and

- (d) the Company and the GOL Designated Assignee have first executed an assignment, assumption and release agreement in respect of the EGAT PPA in the form set forth in Annex B to this GOL Undertaking with such amendments thereto as are necessary to complete that document in that form or otherwise in a form which is reasonably acceptable to the Company, EGAT and the GOL (the **“PPA Assignment, Assumption and Release Agreement”**),

then EGAT shall treat any condition which would otherwise have been required to be complied with under the EGAT PPA to permit such an acquisition as having been complied with to its satisfaction and:

- (e) shall execute the PPA Assignment, Assumption and Release Agreement and take such other actions as are required for the GOL Designated Assignee to acquire the rights and assume the obligations of the Company under and to be substituted for the Company in respect of the EGAT PPA, including using its best efforts to coordinate with the Thai Governmental Authorities in respect of the GOL Designated Assignee’s application to obtain from the Thai Governmental Authorities any Governmental Approvals required for the performance of the EGAT PPA;
- (f) agrees that the PPA Assignment, Assumption and Release Agreement and the EGAT PPA shall be and remain effective in accordance with the terms and conditions set forth therein; and
- (g) subject to the PPA Assignment, Assumption and Release Agreement being duly executed as aforesaid, agrees that:
- (i) EGAT will honour, satisfy, comply with, give effect to and otherwise extend to the GOL Designated Assignee as the substitute of the Company under the EGAT PPA all of the benefits to which it is contractually entitled regarding those terms and conditions that are set forth as covenants, undertakings, representations and other obligations of EGAT under the EGAT PPA;
- (ii) upon the occurrence of the date on which the assignment, assumption and release referred to in the PPA Assignment, Assumption and Release Agreement is to take effect, such date being referred to as the Effective Date in the PPA Assignment, Assumption and Release Agreement, the GOL Designated Assignee shall become a party to the EGAT PPA in lieu of the Company; and

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- (iii) upon becoming a party to the EGAT PPA as referred to in subparagraph (ii) above, the GOL Designated Assignee shall be entitled to benefit from and enjoy all of the rights of, and be subject to the obligations of, the Company under the EGAT PPA.
8. EGAT and the GOL agree that:
- (a) regardless of whether or not there is an occurrence of a Company Termination Event or a Government Termination Event under the Concession Agreement, in all cases where EGAT provides written notice to the Company and the GOL that EGAT elects to exercise its rights to acquire the Generator Assets pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 of the EGAT PPA, EGAT shall have a priority right over that of the GOL to acquire, own, operate and maintain the Generator Assets through an EGAT Designated Assignee that satisfies Clauses 5(j)(ii) or 5(j)(iii) of this GOL Undertaking, as applicable, and in connection therewith the GOL shall comply with Clauses 12.9 and 14.4 of the Concession Agreement and shall not terminate any of the Concession Agreement, the Lease Agreement and/or any relevant Lao PDR Approval or any document required for the operation of the Project; and
- (b) in the event that EGAT provides written notice to the Company and the GOL that EGAT elects not to exercise its rights to acquire the Generator Assets pursuant to Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 of the EGAT PPA, then the GOL shall be permitted to exercise its rights to acquire the Generator Assets pursuant to the Concession Agreement through a GOL Designated Assignee that satisfies Clauses 7(b) or 7(c) of this GOL Undertaking, as applicable; and in such case EGAT and the GOL shall discuss in good faith regarding the execution of a power purchase agreement if the EGAT PPA has been terminated.
9. The GOL represents and confirms that the EdL PPA does not include any terms or conditions that would have an adverse effect on the respective rights and obligations of either the Company or EGAT under the EGAT PPA. Subject to the foregoing, the GOL and EGAT hereby confirm that EdL's rights under and pursuant to the EdL PPA are separate and distinct from EGAT's rights under the EGAT PPA, and EdL's rights to purchase electricity generated by the Generator-EdL System shall be as agreed solely between EdL and the Company. Any exercise by either the GOL or EGAT of its rights to acquire the Generator Assets pursuant to either Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 of the EGAT PPA or Clauses 12.2 or 14.4 of the Concession Agreement, as applicable, shall not result in any change in EdL's rights under and pursuant to the EdL PPA.

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10. This GOL Undertaking shall remain in full force and effect until the rights of both the GOL and EGAT hereunder have expired.

Signed for and on behalf of the Government of the Lao People's Democratic Republic.

Yours faithfully,

**Government of the Lao People's Democratic Republic**

**Date of signing by the GOL: [●]**

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**SCHEDULE 1****FORM OF EGAT ACCEPTANCE OF THE GOL UNDERTAKING**  
*[to be executed on EGAT letterhead]*

To:

**THE GOVERNMENT OF THE  
LAO PEOPLE'S DEMOCRATIC REPUBLIC**  
including all Lao Governmental Authorities and acting

for and on behalf of the Lao PDR (together the "GOL")

represented by the Ministry of Planning and Investment

**REFERRING TO** a document called the "GOL UNDERTAKING" in respect of the Xayaburi Hydroelectric Power Project and signed on behalf of the GOL (which is defined therein as the GOL Undertaking, herein the "GOL Undertaking"), **ELECTRICITY GENERATING AUTHORITY OF THAILAND** (called "EGAT") **HEREBY ACCEPTS** the terms of the GOL Undertaking and **AGREES** with the GOL that by the delivery of this acceptance document to the GOL signed on behalf of EGAT, the GOL Undertaking shall become effective and binding upon the GOL and EGAT in accordance with its terms.

Signed for and on behalf of Electricity Generating Authority of Thailand

Yours faithfully,

**Electricity Generating Authority of Thailand**

Date of signing by EGAT:

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## ANNEX A

## Form of CA Assignment, Assumption and Release Agreement

## Details

Parties	Assignee, Assignor and the GOL	
<b>Assignee</b>	Name	<i>[name of the EGAT Designated Assignee]</i> (the "Assignee")
	Place of incorporation	the Lao PDR
	Address	<i>[address]</i>
	Fax	<i>[fax number]</i>
	Attention	<i>[position]</i>
<b>Assignor</b>	Name	<b>XAYABURI POWER COMPANY LIMITED</b> (the "Assignor")
	Place of incorporation	Lao PDR
	Address	215 Lane Xang Road, Vientiane, Lao PDR
	Fax	(856-21) 215500
	Attention	Chief Executive Officer
<b>GOL</b>	Name	<b>THE GOVERNMENT OF LAO PEOPLE'S DEMOCRATIC REPUBLIC</b> represented by the Ministry of Planning and Investment and acting for and on behalf of the Lao PDR (the "GOL")
	Address	[c/- The Department of Energy Promotion and Development The Ministry of Energy and Mines Nong Bone Road P.O. Box 11964 Vientiane, the Lao PDR]
	Fax	[(856) (21) 415 268]
	Attention	[Director General]

**Recitals** A By a Concession Agreement dated October 29, 2010 made between the GOL and the Assignor, the parties set out the terms by which the GOL

granted the Assignor the right to plan, design, construct and commission the Xayaburi Hydroelectric Power Project (the “**Project**”) to provide generating capacity and electrical energy and to own and operate that Project before transferring it to the GOL on the expiry of the Concession Period.

- B As provided in Clause 5(j) of the GOL Undertaking EGAT has notified the GOL that EGAT is exercising its right or satisfying its obligations to acquire, own, operate and maintain the Generator Assets in accordance with Section *[insert one of [●] as applicable]* of the EGAT PPA, and for that purpose has nominated the Assignee as the EGAT Designated Assignee.
- C The parties, as required by Clause 5(j) of the GOL Undertaking, enter into this Agreement to give effect to the acquisition by the Assignee, subject to certain retentions, of the Assignor’s rights, title, interest and obligations under or in respect of the Concession Agreement free from any Encumbrance as part of the acquisition by EGAT through the Assignee of the Generator Assets.

## General terms

### 1. Consideration

This Agreement is entered into in consideration of the parties incurring obligations and giving rights under this Agreement and for other valuable consideration.

### 2. Definitions and Interpretation

#### 2.1 Concession Agreement to apply

- (a) Unless otherwise defined in this Agreement, words and expressions defined in Clause 1.1 of the Concession Agreement shall have the same meaning in this Agreement.
- (b) In this Agreement:
- (i) references to Clauses are to the clauses of this Agreement unless they are specified to be clauses of the Concession Agreement;
  - (ii) references to the Schedule is to the Schedule to this Agreement;

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*[Handwritten signature]*

- (iii) references to this Agreement are to this CA Assignment, Assumption and Release Agreement unless they are specified to be to the Concession Agreement; and
- (iv) subject to the preceding paragraphs (i), (ii) and (iii), Clause 1.2 of the Concession Agreement applies to the interpretation of this Agreement.

## 2.2 Definitions

Subject to Clause 2.1 and unless the contrary intention appears, words and expressions used in this Agreement have the following meaning:

**Agreement** means this CA Assignment, Assumption and Release Agreement.

**Assigned CA Rights** means all of the rights, title and interest of the Assignor under or in respect of the Concession Agreement (including the rights thereunder regarding Lao PDR Approvals and the Laws of the Lao PDR) as at the Effective Date and all of the rights, title of the Assignor under or in respect of all Lao PDR Approvals then in effect in respect of the Generator Assets, other than the Retained CA Rights.

**Assumed CA Obligations** means all of the liabilities and obligations of the Assignor under or in respect of the Concession Agreement (including the liabilities and obligations thereunder regarding Lao PDR Approvals and the Laws of the Lao PDR) as at the Effective Date, other than the Retained CA Obligations.

**Business Day** shall have the meaning ascribed to it in Section 1 of the EGAT PPA.

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**Claim** means any right:

- (a) to the payment of any amount (whether quantified or unquantified); or
- (b) for the performance of any obligation; or
- (c) to the satisfaction of any liability,

any such right being attributable to any breach by the Assignor or the GOL under or in respect of the Concession Agreement (including the rights or obligations thereunder regarding Lao PDR Approvals and the Laws of the Lao PDR) during the Concession Period up to the Effective Date.

**Concession Agreement** means the agreement referred to in Recital A.

**COP** shall have the meaning ascribed thereto in Part I of Schedule 9 of the EGAT PPA with the COP amounts for the purposes hereof being set out in Part 1 of the Schedule.

**Effective Date** means the date on which the conditions set out in Clause 4 have been satisfied.

**EGAT PPA** means the power purchase agreement made between EGAT and the Assignor dated [●].

**Encumbrance** means any mortgage, lien, charge, pledge, assignment by way of security, security interest, title retention, preferential right or trust arrangement, claim, covenant, profit a prendre, easement or any other security arrangement or any other arrangement having the same effect.

**Indemnified Obligations** means the obligations and liabilities of the Assignee in respect of Claims that are Assumed CA Obligations.

**IO Indemnity Cap** shall have the meaning ascribed to it in Clause 5(a).

**Lao PDR Approvals** shall have the meaning ascribed to it in Clause 1(a) of the GOL Undertaking.

**National Assembly Approvals** means those Lao PDR Approvals granted by the National Assembly as contemplated under the Concession Agreement.

**Notices** means all notices, certificates, consents, approvals, waivers, offers, acceptances and other communications in connection with this Agreement.

**Project** shall have the meaning set forth in Recital A.

**Retained CA Obligations** means all of the obligations and liabilities of the Assignor which arise in respect of any Claims made by the GOL against the Assignor which are known or which should reasonably have been known as between the GOL and the Assignor as at the Effective Date, which shall include all Claims made by the GOL against the Assignor which are set out in Part 3 of the Schedule, but shall exclude all Claims for GOP.

**Retained CA Rights** means all of the rights, title and interest of the Assignor which arise in respect of any Claims made by the Assignor against the GOL, which are Claims that as at the Effective Date either are known as between the GOL and the Assignor or should reasonably have been known as between the GOL and the Assignor and shall include all Claims made by the Assignor against the GOL set out in Part 4 of the Schedule, but shall exclude all Claims for COP.

**Retained Rights** shall have the meaning ascribed to it in Section 1 of the EGAT PPA.

**Generator Assets** shall have the meaning ascribed to it in Section 1 of the EGAT PPA.

**GOP** shall have the meaning ascribed thereto in Part I of Schedule 9 of the EGAT PPA with the GOP amounts for the purposes hereof being set out in Part 2 of the Schedule.

### 3. Assignment, assumption and release

#### 3.1 Assignment of the Assigned CA Rights

- (a) By this Agreement, with effect on and from the Effective Date, the Assignor assigns to the Assignee, and the Assignee accepts, all of the Assignor's rights, title and interest to the Assigned CA Rights free from any Encumbrance.
- (b) The Assignor and the Assignee represent and warrant to the GOL that as at the Effective Date and conditional only on the assignment in Clause 3.1(a) becoming effective in terms of this Agreement, the Assignor will have validly and effectively assigned and transferred to the Assignee all of the rights, interests and benefits of the Assignor under or in respect of all of the Generator Assets, to the extent that none of such rights, interests and benefits shall have been retained by the Assignor as Retained Rights in the manner contemplated under the EGAT PPA, and that such assignments and transfers will be effective on the Effective Date.
- (c) The Assignor, the Assignee and the GOL each agree that the Assignor may enforce against the GOL and give effect to the Retained CA Rights pursuant to this Agreement as if for that limited purpose this Agreement was in all respects the Concession Agreement and with all of the rights and benefits conferred by

the Concession Agreement in respect of those Retained CA Rights and the enjoyment and enforcement of them, but the Assignee shall not enforce nor bring any claims regarding the Retained CA Rights against the GOL.

### **3.2 Agreement by the GOL in respect of the Assigned CA Rights**

The GOL agrees with the Assignee and with the Assignor that:

- (a) the assignment in Clause 3.1(a) shall be effective for the purposes of Clause 14.4 of the Concession Agreement;
- (b) by the assignment in Clause 3.1(a) the Assignee becomes a party to the Concession Agreement instead of the Assignor and the Assignee shall be entitled to the Assigned CA Rights under and in respect thereof; and
- (c) by virtue of the assignment in Clause 3.1(a), the GOL is liable to the Assignee, instead of the Assignor, in respect of any claim which the Assignor may have had or could have claimed against the GOL under or as permitted by the Concession Agreement which does not comprise a Retained CA Right.

### **3.3 Release by the Assignor in respect of the Assigned CA Rights**

Conditional on the occurrence of the Effective Date, the Assignor releases the GOL from:

- (a) any obligation and liability; and
- (b) any Claim which it may have or but for this release might have had against the GOL,

under or in respect of the Assigned CA Rights.

### **3.4 Assumption of the Assumed CA Obligations**

- (a) Subject to the terms and conditions of this Agreement, with effect from the Effective Date, the Assignee assumes the Assumed CA Obligations without restriction.
- (b) The Assignor, the Assignee and the GOL each agree that the GOL may enforce against the Assignor and give effect to the Retained CA Obligations pursuant to this Agreement as if, for that limited purpose, this Agreement was in all respects the Concession Agreement and with all of the rights and benefits conferred by the Concession Agreement in respect of the Retained CA Obligations and the

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enjoyment and enforcement of them, but the GOL shall not enforce nor bring any claims regarding the Retained CA Obligations against the Assignee.

### **3.5 Agreement and release by the GOL in respect of the Assumed CA Obligations**

The GOL:

- (a) agrees to and accepts the assumption by the Assignee of the Assumed CA Obligations instead of the Assignor; and
- (b) conditional on the occurrence of the Effective Date, releases the Assignor from:
  - (i) any obligation and liability; and
  - (ii) any Claim which it may have or but for this release might have had against the Assignor,

under or in respect of the Assumed CA Obligations.

### **4. Conditions to the Effective Date Occurring and Subsequent Conditions**

- (a) The parties agree that the Effective Date shall occur upon satisfaction of the following:
  - (i) the deposit into the escrow account or the provision of the letter of credit, as the case may be, in respect of the security referred to in Clause 5(d); and
  - (ii) the acquisition by the Assignee of all of the other Generator Assets in accordance with Sections 10.1.3, 10.2.3, 11.7.5 or 11.8.5 of the EGAT PPA, including all rights related thereto and all other assets of the Project which are required for the Assignee to own, operate, maintain and carry out its business regarding the Project in accordance with the requirements of the Concession Agreement.
- (b) The Assignee agrees with the GOL that if as at the Effective Date it has not executed the EGAT PPA with EGAT, it shall upon the request of the GOL do so immediately after the occurrence of the Effective Date.

### **5. Indemnity for Indemnified Obligations**

- (a) Subject to Clause 5(b), the Assignor hereby agrees, within fourteen (14) days of its receipt of a written demand from the Assignee setting out the particulars of the basis of the amount demanded, to pay by way of indemnity to the Assignee

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up to the total aggregate cap amount payable by the Assignee under this indemnity of US\$4,000,000 (the “**IO Indemnity Cap**”) for all amounts paid by the Assignee in respect of any of the Indemnified Obligations.

- (b) The Assignee acknowledges and agrees that no demand may be made by the Assignee against the Assignor under Clause 5(a) after the date which is the third anniversary of the Effective Date or, if earlier, the date on which the Assignor has paid in aggregate to the Assignee an amount equal to the IO Indemnity Cap in respect of the demands made by the Assignee thereunder.
- (c) The Assignee shall promptly notify the Assignor if it receives any notification of a claim against it for which it would be entitled to make a demand under Clause 5(a) and of the particulars thereof and shall, if requested by the Assignor, confer with the Assignor with respect to such notification and the circumstances thereof.
- (d) As security for the payment of the amounts payable by it under Clause 5(a), the Assignor shall as a condition precedent to the occurrence of the Effective Date procure either that an amount equal to the IO Indemnity Cap is deposited into an escrow account for the benefit of the Assignee on terms acceptable to the Assignee or that a letter of credit or other security acceptable to the Assignee is provided to the Assignee in respect of those obligations, the Assignee's acceptance in either case not to be unreasonably withheld or delayed.

## 6. Representations, warranties and agreements

### 6.1 General representations, warranties and agreements

Each party represents, warrants and agrees with each other party that:

- (a) it has power to enter into and comply with its obligations under this Agreement;
- (b) it has in full force and effect the authorisations necessary for it to enter into and comply with its obligations and exercise its rights under this Agreement and to allow them to be enforced;
- (c) its obligations under this Agreement are valid and binding and are enforceable against it in accordance with their terms; and
- (d) either it does not have or, if it has, by entering into this Agreement, it hereby waives for purposes of this Agreement, any immunity from the jurisdiction of any court or from any legal process.

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**6.2 Representations, warranties and agreements of the Assignee**

Without limiting Clause 6.1, the Assignee also represents, warrants and agrees with the Assignor and the GOL that:

- (a) it has been incorporated as a company limited by shares in accordance with the laws of the Lao PDR and is validly existing under those laws and has power and authority to carry on its business;
- (b) as a consequence of the assignment in Clause 3.1(a), it will at the date of this Agreement and all times during the Concession Period be a special purpose company carrying on the business of the developer, owner and operator of the Project as required by and for the purposes of the Concession;
- (c) it has been nominated by EGAT as the EGAT Designated Assignee for purposes of this Agreement;
- (d) at the date of this Agreement and all times prior to the Commercial Operation Date it will remain a company in which an Industry Expert, directly or indirectly, holds at least 35% of the total equity shareholding in circumstances where that Industry Expert shareholder has agreed to provide appropriate technical services to it;
- (e) at all times after the Commercial Operation Date it will either:
  - (i) have as one of its shareholders an Industry Expert holding, directly or indirectly, at least 15% of the total equity shareholding in circumstances where that Industry Expert shareholder has agreed to provide appropriate technical services to it; or
  - (ii) have engaged, in accordance with the terms of an Operating and Maintenance Contract reasonably acceptable to the GOL, an Industry Expert to be responsible for operating and maintaining the entirety of the Generator System in accordance with the requirements of the Concession Agreement until the expiration of the Concession Period;
- (f) without limiting Clause 6.2(b), this Agreement does not and will not:
  - (i) contravene its constituent documents or any law or obligation or Encumbrance by which it is bound or to which any of its assets are subject or cause a limitation on its powers or the powers of its directors to be exceeded; or

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- (ii) result in the creation or imposition of any Encumbrance or restriction of any nature on any of its assets or the acceleration of the date of payment of any obligation existing under any Encumbrance, undertaking or document which is binding upon it or on any of its assets; and
- (g) it does not enter into this Agreement as trustee.

### **6.3. Representations, warranties and agreements of the GOL**

The GOL also represents, warrants and agrees with the Assignor and the Assignee that:

- (a) the execution, delivery and performance of this Agreement by the Assignor and by the Assignee does not violate or conflict with or otherwise contravene any Laws of the Lao PDR to which the Assignor is subject or which applies to the Assignor and/or to the Project;
- (b) without limiting Clause 6.3(a), nothing in this Agreement or any of the transactions contemplated by this Agreement constitutes:
  - (i) a breach of any term of the Concession Agreement;
  - (ii) a Breach of Contract under the Concession Agreement; or
  - (iii) any other event or circumstance which of itself, or with the giving of notice, lapse of time, satisfaction of some other condition, or any combination of these, causes or enables the acceleration of any payment to be made under, or the enforcement of, the Concession Agreement; and
- (c) on and after the Effective Date the Assignee shall be entitled to exercise the rights under the Lao PDR Approvals issued to the Assignor as at the Effective Date subject to its subsequent compliance with Clause 14.4 of the Concession Agreement.

### **7. Amendments to the Concession Agreement**

The Assignee and the GOL agree that they shall not without agreement between them require or make any material revision or adjustment to the Concession Agreement.

### **8. Costs**

The parties agree to pay their own legal and other costs and expenses in connection with the preparation, execution and completion of this Agreement and other related documentation.

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## 9. Governing Law

### 9.1 Laws of the Lao PDR to apply

This Agreement shall be governed by the Laws of the Lao PDR, provided that any issue which is not addressed by applicable provisions and established principles of the Laws of the Lao PDR shall be construed and interpreted in accordance with the laws of England.

### 9.2 Where Laws of the Lao PDR is not to apply

If the Laws of the Lao PDR is found to be wholly silent on the issues in question, or so inadequate as to preclude the making of any reasonable finding on the issues in question, then, for the purposes of interpreting the terms and conditions of this Agreement, the Laws of Thailand will apply.

## 10. Disputes

- (a) Any dispute, controversy or claim of any kind which arises between the parties in respect of or in connection with this Agreement, including any dispute, controversy or claim relating to any breach or the interpretation, validity or termination of this Agreement shall be conducted in accordance with the arbitration rules issued by the United Nations Commission on International Trade Law as in force upon commencement of such arbitration (the **UNCITRAL Rules**) or as otherwise agreed in writing by the Parties.
- (b) The arbitration shall be conducted in Singapore using the English language.
- (c) Absent fraud, manifest error, negligence, willful misconduct, bad faith on the part of the arbitral panel and such other similar grounds for judicial appeal or challenge as are permitted under the Arbitration Rules, the written decision of the arbitral panel shall be final and binding upon the parties to the arbitration and the parties hereby waive any right to appeal, review or challenge such award before any court or tribunal on any grounds whatsoever. The costs of such arbitration shall be decided and allocated between the parties by the arbitral panel in its award.
- (d) Where any dispute concerns all of the parties then the parties agree that they shall resolve that dispute through a single arbitration before the same arbitral tribunal under common arbitration rules.

## 11. Notices

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**11.1 Form**

Unless expressly stated otherwise in this Agreement, all Notices must be in writing, signed by the sender (if an individual) or an Authorised Officer of the sender and marked as set out or referred to in the Details (as specified in the Recital) or, if the recipient has notified otherwise, then marked for attention in the way last notified.

**11.2 Delivery**

Notices must be:

- (a) delivered by hand at the address set out or referred to in the Details; or
- (b) sent by prepaid ordinary post (airmail if appropriate) to the address set out or referred to in the Details; or
- (c) sent by fax to the fax number set out or referred to in the Details; or
- (d) given in any other way permitted by the Concession Agreement,

provided, however, if the intended recipient has notified a changed postal address or changed fax number, then the communication must be to that address or number.

**11.3 When effective**

Notices take effect from the time they are received unless a later time is specified.

**11.4 Receipt - hand delivery**

In the case of delivery by hand, Notices are taken to be received on delivery.

**11.5 Receipt - post**

If sent by prepaid post, Notices are taken to be received on the fifth day after the date of posting.

**11.6 Receipt - fax**

If sent by fax, Notices are taken to be received on the Business Day following the day of dispatch, provided electronic confirmation of the transmission has been legibly received.

**11.7 Receipt - general**

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Despite Clauses 11.5 (“Receipt - post”) and 11.6 (“Receipt - fax”), Notices received after 5:00 p.m. in the place of receipt or on a day which is not a Business Day are to be taken to be received at 9:00 a.m. on the next Business Day.

**EXECUTED** as an agreement

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**Schedule**

**Part 1 – COP**

*[To be completed]*

**Part 2 - GOP**

*[To be completed]*

**Part 3 - Retained CA Obligations**

*[To be completed]*

**Part 4- Retained CA Rights**

*[To be completed]*

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**Signing page**

**DATED:** \_\_\_\_\_

**SIGNED** by **#NAME OF** )  
**AUTHORISED** )  
**REPRESENTATIVE#** as )  
authorised representative for )  
**#COMPANY NAME OF** )  
**ASSIGNEE #** in the presence of: )

..... )  
Signature of witness )

..... )  
Name of witness (block letters) )

.....  
By executing this agreement the  
signatory warrants that the signatory  
is duly authorised to execute this  
agreement on behalf of  
**#COMPANY NAME #**

**SIGNED** by **#NAME OF** )  
**AUTHORISED** )  
**REPRESENTATIVE#** as )  
authorised representative for )  
**XAYABURI POWER** )  
**COMPANY LIMITED** in the )  
presence of: )

..... )  
Signature of witness )

..... )  
Name of witness (block letters) )

.....  
By executing this agreement the  
signatory warrants that the signatory  
is duly authorised to execute this  
agreement on behalf of  
**XAYABURI POWER COMPANY**  
**LIMITED**

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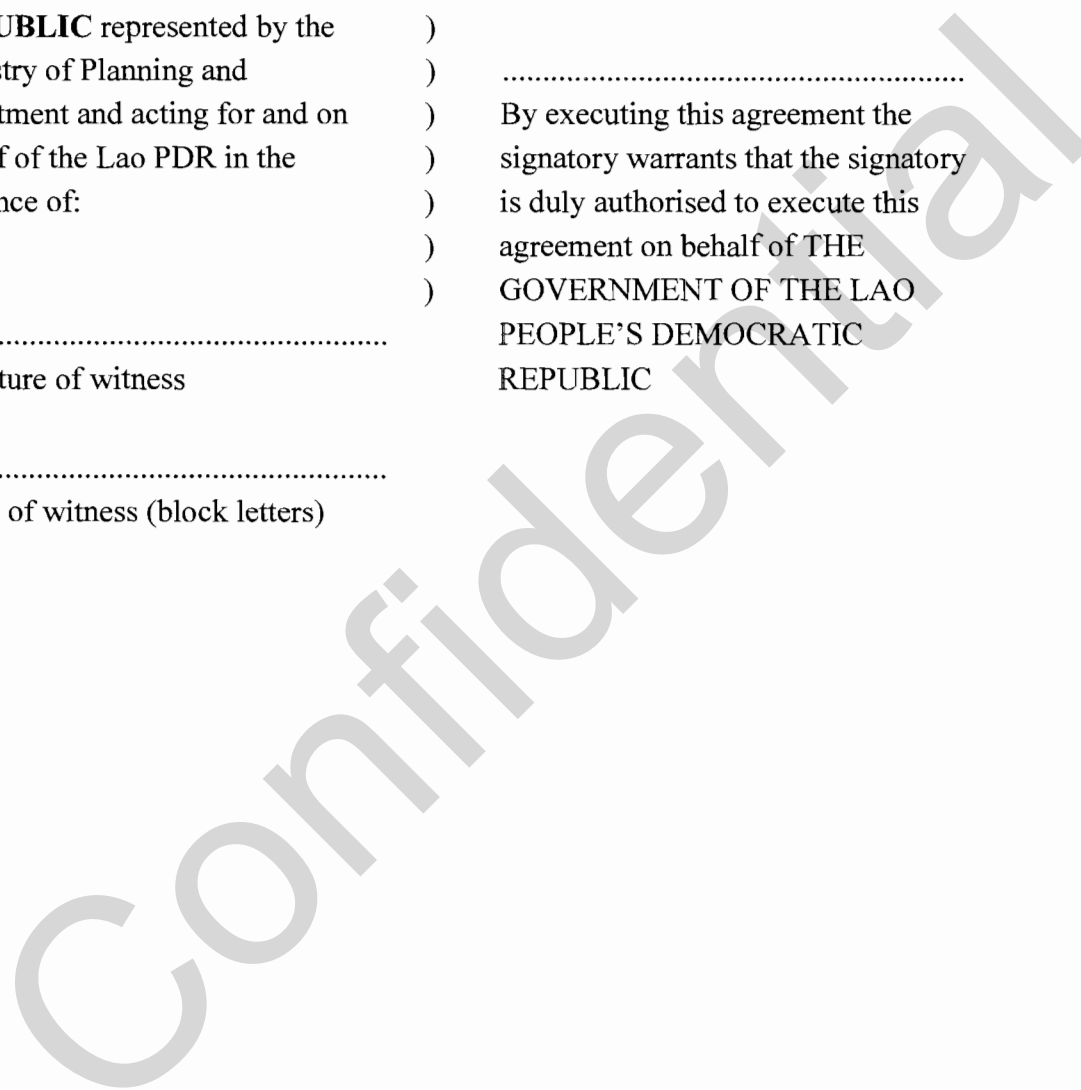
**SIGNED** by *#NAME OF* )  
**AUTHORISED** )  
**REPRESENTATIVE#** as )  
 authorised representative for **THE** )  
**GOVERNMENT OF THE LAO** )  
**PEOPLE'S DEMOCRATIC** )  
**REPUBLIC** represented by the )  
 Ministry of Planning and )  
 Investment and acting for and on )  
 behalf of the Lao PDR in the )  
 presence of: )

.....  
 By executing this agreement the  
 signatory warrants that the signatory  
 is duly authorised to execute this  
 agreement on behalf of THE  
 GOVERNMENT OF THE LAO  
 PEOPLE'S DEMOCRATIC  
 REPUBLIC

.....  
Signature of witness

.....  
Name of witness (block letters)

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## ANNEX B

**Form of PPA Assignment, Assumption and Release Agreement**

<b>Details</b>		
<b>Parties</b>	<b>Assignee, Assignor and EGAT</b>	
<b>Assignee</b>	Name	<i>[name of the GOL Designated Assignee]</i> (the "Assignee")
	Place of incorporation	the Lao PDR
	Address	<i>[address]</i>
	Fax	<i>[fax number]</i>
	Attention	<i>[position]</i>
<b>Assignor</b>	Name	<b>XAYABURI POWER COMPANY LIMITED</b> (the "Assignor")
	Place of incorporation	Lao PDR
	Address	215 Lane Xang Road, Vientiane, Lao PDR
	Fax	(856-21) 215500
	Attention	Chief Executive Officer
<b>EGAT</b>	Name	<b>ELECTRICITY GENERATING AUTHORITY OF THAILAND</b> ("EGAT")
	Address	53 Charansanitwong Road Nonthaburi 11130 Thailand
	Fax	[(66) 2433 6317]
	Attention	<b>[position]</b>

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- Recitals**
- A** By a Concession Agreement dated October 29, 2010 made between the Government of the Lao PDR (the “**GOL**”) and the Assignor, the parties set out the terms by which the GOL granted the Assignor the right to plan, design, construct and commission the Xayaburi Hydroelectric Power Project (the “**Project**”) to provide generating capacity and electrical energy and to own and operate that Project before transferring it to the GOL on the expiry of the Concession Period.
- B** By a Power Purchase Agreement dated [●] (the “**EGAT PPA**”) made between EGAT and the Assignor, as the Company named therein, the parties set out the terms by which the Assignor agreed to supply to EGAT generating capacity of the Project and the electrical energy generated thereby as more particularly provided in the EGAT PPA.
- C** As provided in Clause 7 of the GOL Undertaking the GOL has notified EGAT that the GOL is exercising its right or satisfying its obligations to acquire the rights and obligations of the Assignor under the EGAT PPA pursuant to Clause 12.7.2 of the Concession Agreement and for that purpose has nominated the Assignee, as the GOL Designated Assignee.
- D** The parties, as required by Clause 7 of the GOL Undertaking, enter into this Agreement to give effect to the acquisition by the Assignee of the Assignor’s rights, title, interest and obligations under or in respect of the EGAT PPA free from any Encumbrance as part of the acquisition by the GOL through the Assignee of the Generator Assets.

## General terms

### 1. Consideration

This Agreement is entered into in consideration of the parties incurring obligations and giving rights under this Agreement and for other valuable consideration.

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## 2. Definitions and Interpretation

### 2.1 EGAT PPA to Apply

- (a) Unless otherwise defined in this Agreement, words and expressions defined in Section 1.1 of the EGAT PPA shall have the same meaning in this Agreement.
- (b) In this Agreement:
- (i) references to Clauses are to the clauses of this Agreement unless they are specified to be clauses of other agreements;
  - (ii) references to this Agreement are to this PPA Assignment, Assumption and Release Agreement unless they are specified to be to other agreements; and
  - (iii) subject to the preceding paragraphs (i) and (ii), Section 1.2 of the EGAT PPA applies to the interpretation of this Agreement.

### 2.2 Definitions

Subject to Clause 2.1 and unless the contrary intention appears, words and expressions used in this Agreement have the following meaning:

**Agreement** means this PPA Assignment, Assumption and Release Agreement.

**Assigned PPA Rights** means all of the rights, title and interest of the Assignor under or in respect of the EGAT PPA, including any and all Claims.

**Assumed PPA Obligations** means all of the liabilities and obligations of the Assignor under or in respect of the EGAT PPA, other than the Retained PPA Obligations.

**Business Day** shall have the meaning ascribed to it in Section 1.1 of the EGAT PPA.

**Claim** means any right to the payment of any amount whether quantified or unquantified or for the performance of any obligation or to the satisfaction of any liability under or in respect of the EGAT PPA.

**Effective Date** means the date on which the conditions set out in Clause 4 have been satisfied.

**EGAT PPA** shall have the meaning set forth in Recital B.

**Encumbrance** means any mortgage, lien, charge, pledge, assignment by way of security, security interest, title retention, preferential right or trust arrangement, claim,

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covenant, profit a prendre, easement or any other security arrangement or any other arrangement having the same effect.

**Notices** means all notices, certificates, consents, approvals, waivers, offers, acceptances and other communications in connection with this Agreement.

**Project** shall have the meaning set forth in Recital A.

**Retained PPA Obligations** means any liabilities and obligations of the Assignor regarding the liquidated damages due and owing to EGAT pursuant to Section 9 of the EGAT PPA which had accrued and remained unsatisfied as at the Effective Date.

### 3. Assignment, Assumption and Release

#### 3.1 Assignment of Assigned PPA Rights

- (a) By this Agreement, with effect from the Effective Date, the Assignor assigns to the Assignee, and the Assignee accepts, all of the Assignor's rights, title and interest in and under the EGAT PPA free from any Encumbrance.
- (b) The Assignor and the Assignee represent and warrant to EGAT that as at the Effective Date and conditional only on the assignment in Clause 3.1(a) becoming effective in terms of this Agreement, the Assignor will have validly and effectively assigned and transferred to the Assignee all of the rights, interests and benefits of the Assignor under or in respect of all of the Generator Assets, and that such assignments and transfers will be effective on the Effective Date.

#### 3.2 Agreement of EGAT in respect of the Assigned PPA Rights

EGAT agrees with the Assignee and with the Assignor that:

- (a) the assignment in Clause 3.1(a) shall be effective for the purposes of the EGAT PPA;
- (b) by the assignment in Clause 3.1(a) the Assignee becomes a party to the EGAT PPA instead of the Assignor and the Assignee shall be entitled to the Assigned PPA Rights under and in respect thereof; and
- (c) by virtue of the assignment in Clause 3.1(a), EGAT is liable to the Assignee, instead of the Assignor, in respect of any claim which the Assignor may have had or could have claimed against EGAT under or as permitted by the EGAT PPA.

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### 3.3 Release by the Assignor

Conditional on the occurrence of the Effective Date, the Assignor releases EGAT from:

- (a) any obligation and liability; and
- (b) any Claim which it may have or but for this release might have had against EGAT,

under or in respect of the Assumed PPA Rights.

### 3.4 Assumption of the Assumed PPA Obligations

- (a) Subject to the terms and conditions of this Agreement, with effect from the Effective Date, the Assignee assumes the Assumed PPA Obligations without restriction.
- (b) The Assignor, the Assignee and EGAT each agree that EGAT may enforce against the Assignor and give effect to the Retained PPA Obligations pursuant to this Agreement as if, for that limited purpose, this Agreement was in all respects the EGAT PPA and with all of the rights and benefits conferred by the EGAT PPA in respect of the Retained PPA Obligations and the enjoyment and enforcement of them, but EGAT shall not enforce nor bring any claims regarding the Retained PPA Obligations against the Assignee.

### 3.5 Agreement and Release by EGAT in respect of the Assumed PPA Obligations

**EGAT:**

- (a) agrees to and accepts the assumption by the Assignee of the Assumed PPA Obligations instead of the Assignor; and
- (b) conditional on the occurrence of the Effective Date, releases the Assignor from:
  - (i) any obligation and liability; and
  - (ii) any Claim which it may have or but for this release might have had against the Assignor,

under or in respect of the Assumed PPA Obligations.

## 4. Conditions to the Effective Date Occurring and Subsequent Conditions

- (a) The parties agree that the Effective Date shall occur upon satisfaction of the following:

- (i) the Assignee shall have procured the issuance to EGAT of, and the coming into effect of, each of the Securities required to be issued to EGAT in accordance with the EGAT PPA in exchange for and conditional upon the surrender by EGAT to the Assignor and cancellation by the relevant issuing bank which issued the same of all of the then current Securities which they replace;
  - (ii) the acquisition by the Assignee of all of the other Generator Assets in accordance with Clause 12.7.2 of the Concession Agreement, including all rights related thereto and all other assets of the Project which are required for the Assignee to own, operate, maintain and carry out its business regarding the Project in accordance with the requirements of the EGAT PPA.
- (b) Subject to Sections 9.2(e) and 9.7 of the EGAT PPA, EGAT agrees with the Assignor and the Assignee that EGAT will surrender and agree to the cancellation of each of the then current Securities it holds in exchange for the Securities to be issued and come into effect as provided in Clause 4(a).
- (c) The Assignee agrees with EGAT that if as at the Effective Date it has not executed the Concession Agreement with the GOL, it shall upon the request of EGAT do so immediately after the occurrence of the Effective Date.

## **5. Representations and warranties**

### **5.1 General representations and warranties**

Each party represents and warrants to each other party that:

- (a) it has power to enter into and comply with its obligations under this Agreement;
- (b) it has in full force and effect the authorisations necessary for it to enter into and comply with its obligations and exercise its rights under this Agreement and to allow them to be enforced;
- (c) its obligations under this Agreement are valid and binding and are enforceable against it in accordance with their terms; and
- (d) either it does not have or, if it has, by entering into this Agreement, it hereby waives for purposes of this Agreement, any immunity from the jurisdiction of any court or from any legal process.

### **5.2 Representations and warranties from the Assignee**



Without limiting Clause 5.1, the Assignee also represents and agrees with the Assignor and EGAT that:

- (a) it has been incorporated as a company limited by shares in accordance with the laws of the Lao PDR and is validly existing under those laws and has power and authority to carry on its business as it is now being conducted;
- (b) as a consequence of the assignment in Clause 3.1(a), it will at the date of this Agreement and all times during the Term be a special purpose company carrying on the business of the developer, owner and operator of the Project and it will carry on no other business;
- (c) it has been nominated by the GOL as the GOL Designated Assignee for purposes of this Agreement;
- (d) at the date of this Agreement and all times prior to the Commercial Operation Date it will remain a company in which an Industry Expert, directly or indirectly, holds at least 35% of the total equity shareholding in circumstances where that Industry Expert shareholder has agreed to provide appropriate technical services to it;
- (e) at all times after the Commercial Operation Date it will either:
  - (i) have as one of its shareholders an Industry Expert holding, directly or indirectly, at least 15% of the total equity shareholding in circumstances where that Industry Expert shareholder has agreed to provide appropriate technical services to it; or
  - (ii) have engaged, in accordance with the terms of an Operating and Maintenance Contract reasonably acceptable to EGAT, an Industry Expert to be responsible for operating and maintaining the entirety of the Generator System in accordance with the requirements of the Concession Agreement until the expiration of the Concession Period;
- (f) without limiting Clause 5.2(b), this Agreement does not and will not:
  - (i) contravene its constituent documents or any law or obligation or Encumbrance by which it is bound or to which any of its assets are subject or cause a limitation on its powers or the powers of its directors to be exceeded; or
  - (ii) result in the creation or imposition of any Encumbrance or restriction of any nature on any of its assets or the acceleration of the date of payment

of any obligation existing under any Encumbrance, undertaking or document which is binding upon it or on any of its assets; and

- (g) it does not enter into this Agreement as trustee.

### 5.3 Representations, warranties and agreements of EGAT

EGAT represents, warrants and agrees with the Assignor and the Assignee that:

- (a) the execution, delivery and performance of this Agreement by EGAT does not violate or conflict with or otherwise contravene any Law to which EGAT is subject or which applies to EGAT and/or to the EGAT PPA;
- (b) without limiting Clause 5.3(a), nothing in this Agreement or any of the transactions contemplated by this Agreement constitutes:
- (i) a breach of any term of the EGAT PPA;
  - (ii) an Event of Default under the EGAT PPA; or
  - (iii) any other event or circumstance which of itself, or with the giving of notice, lapse of time, satisfaction of some other condition, or any combination of these, causes or enables the acceleration of any payment to be made under, or the enforcement of, the EGAT PPA; and
- (c) it shall use its best efforts to coordinate with the Thai Governmental Authorities in respect of the Assignee's application to obtain from the Thai Governmental Authorities any Governmental Approvals required for the performance of the EGAT PPA.

### 6. Costs

The parties agree to pay their own legal and other costs and expenses in connection with the preparation, execution and completion of this Agreement and other related documentation.

### 7. Governing Law

This Agreement shall be governed by and construed in all respects in accordance with the law of Thailand.

### 8. Disputes

OK.

*Signature*

- (a) Any dispute, controversy or claim of any kind which arises between the parties in respect of or in connection with this Agreement, including any dispute, controversy or claim relating to any breach or the interpretation, validity or termination of this Agreement shall be conducted in accordance with the arbitration rules issued by the United Nations Commission on International Trade Law as in force upon commencement of such arbitration (the **UNCITRAL Rules**) or as otherwise agreed in writing by the Parties.
- (b) The arbitration shall be conducted in Singapore using the English language.
- (c) Absent fraud, manifest error, negligence, willful misconduct, bad faith on the part of the arbitral panel and such other similar grounds for judicial appeal or challenge as are permitted under the Arbitration Rules, the written decision of the arbitral panel shall be final and binding upon the parties to the arbitration and the parties hereby waive any right to appeal, review or challenge such award before any court or tribunal on any grounds whatsoever. The costs of such arbitration shall be decided and allocated between the parties by the arbitral panel in its award.
- (d) Where any dispute concerns all of the parties then the parties agree that they shall resolve that dispute through a single arbitration before the same arbitral tribunal under common arbitration rules.

## 9. Notices

### 9.1 Form

Unless expressly stated otherwise in this Agreement, all Notices must be in writing, signed by the sender (if an individual) or an Authorised Officer of the sender and marked as set out or referred to in the Details (as specified in the Recital) or, if the recipient has notified otherwise, then marked for attention in the way last notified.

### 9.2 Delivery

Notices must be:

- (a) delivered by hand at the address set out or referred to in the Details; or
- (b) sent by prepaid ordinary post (airmail if appropriate) to the address set out or referred to in the Details; or
- (c) sent by fax to the fax number set out or referred to in the Details; or

OK .

(d) given in any other way permitted by the EGAT PPA,

provided, however, if the intended recipient has notified a changed postal address or changed fax number, then the communication must be to that address or number.

### **9.3 When effective**

Notices take effect from the time they are received unless a later time is specified.

### **9.4 Receipt - hand delivery**

In the case of delivery by hand, Notices are taken to be received on delivery.

### **9.5 Receipt - post**

If sent by prepaid post, Notices are taken to be received on the fifth day after the date of posting.

### **9.6 Receipt - fax**

If sent by fax, Notices are taken to be received on the Business Day following the day of dispatch, provided electronic confirmation of the transmission has been legibly received.

### **9.7 Receipt - general**

Despite Clauses 9.5 ("Receipt - post") and 9.6 ("Receipt - fax"), Notices received after 5:00 p.m. in the place of receipt or on a day which is not a Business Day are to be taken to be received at 9:00 a.m. on the next Business Day.

**EXECUTED** as an agreement

DK -

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**Signing page**

**DATED:** \_\_\_\_\_

**SIGNED** by **#NAME OF** )  
**AUTHORISED** )  
**REPRESENTATIVE#** as )  
authorised representative for )  
**#COMPANY NAME OF** )  
**ASSIGNEE#** in the presence of: )

)  
)  
)  
..... )

Signature of witness )  
)  
..... )  
Name of witness (block letters) )

By executing this agreement the  
signatory warrants that the signatory  
is duly authorised to execute this  
agreement on behalf of  
#COMPANY NAME #

**SIGNED** by **#NAME OF** )  
**AUTHORISED** )  
**REPRESENTATIVE#** as )  
authorised representative for )  
**XAYABURI POWER** )  
**COMPANY LIMITED** in the )  
presence of: )

)  
)  
..... )  
)

Signature of witness )  
)  
..... )  
Name of witness (block letters) )

By executing this agreement the  
signatory warrants that the signatory  
is duly authorised to execute this  
agreement on behalf of  
XAYABURI POWER COMPANY  
LIMITED

010.

**SIGNED** by *#NAME OF* )  
**AUTHORISED** )  
**REPRESENTATIVE#** as )  
 authorised representative for )  
**ELECTRICITY GENERATING** )  
**AUTHORITY OF THAILAND** in )  
 the presence of: )

..... )  
 )  
 ..... )  
 Signature of witness )  
 )  
 ..... )  
 Name of witness (block letters) )

.....  
 By executing this agreement the  
 signatory warrants that the signatory  
 is duly authorised to execute this  
 agreement on behalf of  
**ELECTRICITY GENERATING**  
**AUTHORITY OF THAILAND**

DK.



Confidential

**Schedule 25****FORMS OF ADDITIONAL SECURITY, INSURANCE ASSIGNMENT,  
SUBORDINATION AGREEMENT AND GOL CONSENT****Part I: Additional Security****MORTGAGE CONTRACT OVER SECURED PROPERTY**

*between*

Electricity Generating Authority of Thailand, a state enterprise organized under the laws of Thailand, whose registered office is situated at 53 Charansanitwong Road, Bang Kruai, Nonthaburi 11130, Thailand (in this Mortgage Contract called the “**Security Taker**”),

*and*

[ ], ] and whose hydro power plant is located on the Mekong River at [ ] in the [ ] Province and most of the components of the Project are in the [ ] Provinces and the transmission line passes through the [ ] Provinces (in this Mortgage Contract called the “**Security Provider**”).

**Whereas**, the Security Provider and the Government of the Lao PDR have entered into a concession agreement relating to the Xayaburi Hydroelectric Power Project in the Lao PDR, dated [ ] and the side agreement dated [ ] (collectively called the “**Concession Agreement**” in this Mortgage Contract) under which the Security Provider is authorized to develop, own and operate the Xayaburi hydroelectric power facility and to sell electrical energy generated thereby to the Security Taker.

**Whereas**, the Security Provider and the Security Taker have entered into a power purchase agreement relating to the Xayaburi Hydroelectric Power Project in the Lao PDR, dated [ ] (in this Mortgage Contract called the “**Agreement**”), under which the Security Provider has agreed to develop, own and operate the Xayaburi hydroelectric power facility and to sell electrical energy generated thereby to the Security Taker.

**Whereas**, the Security Taker, the Security Provider and [ ] as agent and trustee for the Lenders (in this Mortgage Contract called the “**Security Agent**”) have entered into a subordination agreement pursuant to Section 9.4.4 of the Agreement, dated [ ] (in this Mortgage Contract called the “**Subordination Agreement**”).

**Whereas**, the Security Provider and the Lenders represented by [ ] as Lao security agent have entered into a [Lao Immovable Asset Security Agreement] dated [ ] under which the Security Provider assigns its rights over the immovable assets, titles and interests in such immovable assets which the Security Provider exclusively owns and which are located in the Lao PDR or granted by any Lao Governmental Authority in favour of the Lenders as a first priority security for the secured liabilities of the Lenders.

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

**Now, therefore,** the Parties agree to make this Mortgage Contract on the following terms and conditions:

Unless otherwise defined in this Mortgage Contract, terms defined, or incorporated by reference, in the Agreement or the Concession Agreement as the context requires shall have the same meaning when used in this Mortgage Contract.

**Article 1:**

As security for the Security Provider's obligation to make payment to the Security Taker for all outstanding liabilities under the Agreement upon termination of the Agreement up to an amount equal to [ ] Million (THB [ ]) (the "**Secured Obligations**"), the Security Provider hereby grants to the Security Taker, and the Security Taker hereby accepts, a second ranking mortgage over the following properties, buildings and constructions described in [ ] presently or to be located in the Lao PDR and a second ranking security over the Security Provider's rights under the Concession Agreement to use the land located in the Lao PDR as identified in [ ], as further described in the maps contained in a CD Rom attached to this Mortgage Contract, forming immovable assets thereon (in this Mortgage Contract called the "**Secured Property**"). The Security Provider represents and warrants to the Security Taker that all assets comprising the Secured Property have also been assigned as first ranking mortgage to the Lenders.

**Article 2:**

The interests of the Security Taker under this Mortgage Contract are subordinated to the interests of the Lenders (or the Security Agent acting on their behalf) over the Secured Property in accordance with, and to the extent required by, the terms of the Subordination Agreement. This Mortgage Contract will be subject in all respects to the terms of the Subordination Agreement.

**Article 3:**

The Security Taker agrees that the registration of this Mortgage Contract as second ranking security over immovable assets and right to use immovable assets with the State Assets Management Department shall be performed by the Security Taker only after the Security Provider has notified the Security Taker in writing that the Security Agent acting for the Lenders has registered the Lenders' first ranking mortgage over the Secured Property with the State Assets Management Department.

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25**Article 4:**

In the event of enforcement of the mortgage, and if the net proceeds derived therefrom are less than the amount of the Secured Obligations, the Security Provider shall continue to be responsible to pay any amount outstanding or due to the Security Taker up to the time when the payment of such amount is made in full.

**Article 5:**

The Security Provider warrants that it has legal possession of and right to use the Secured Property and that the Security Provider's rights to the Secured Property have been duly certified according to the laws of the Lao PDR and that at the date hereof the Secured Property is free from any encumbrances and tax liabilities, and that, other than pursuant to the Financing Documents and the Concession Agreement, the Security Provider has not granted and will not grant any rights to any Person, such as to let, give habitation or allow a third party to construct or do any act on the Secured Property.

**Article 6:**

If the Security Provider builds any permanent construction on the Secured Property then that construction and any other improvements, repairs or extensions to any construction on the Secured Property will form part of the security granted to the Security Taker under this Mortgage Contract.

**Article 7:**

The Security Provider shall promptly complete all reasonable actions, deliver all documents and provide to the Security Taker all information and evidence (including to sign, seal, execute and deliver all deeds, instruments, notices and documents) for: (i) registering the mortgage created by this Mortgage Contract with the State Assets Management Department under the Laws of the Lao PDR; and/or (ii) maintaining, perfecting or protecting the security interest created by this Mortgage Contract in order for the Security Taker to enforce its rights under this Mortgage Contract.

**Article 8:**

Until the Secured Obligations have been irrevocably and unconditionally discharged, the Security Provider agrees with the Security Taker as follows:

- (1) the Security Provider shall use and maintain the Secured Property in the manner required under the Agreement and shall comply with all applicable laws, announcements, decrees, and regulations of the Lao PDR that have been issued from time to time in relation to the Secured Property;

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

- (2) the Security Provider shall not sell, transfer, assign or grant further security over the Secured Property, other than security in favour of or on behalf of the Lenders as permitted under the Agreement, nor shall the Security Provider do or permit or consent to being done anything, or omit to do anything, that will in any way materially deteriorate or lessen the value of the Secured Property; and
- (3) this Mortgage Contract and the security granted by the Security Provider to the Security Taker shall be a continuing security and shall remain in full force and effect, notwithstanding the liquidation, bankruptcy, reorganization or other incapacity of the Security Provider or any change in the constitution or amalgamation or reconstruction of the Security Provider.

**Article 9:**

If the Security Provider fails to pay the Secured Obligations when due and payable upon the termination of the Agreement, the Security Taker may exercise all of the rights and powers in respect of the Secured Property which are set out in the Agreement, subject at all times to the terms and conditions of this Mortgage Contract and the Subordination Agreement.

**Article 10:**

All mortgage registration fees and stamp duties and all reasonable costs incurred by the Security Taker in each case related to the mortgage, including the registration of the mortgage and the release thereof, shall be solely borne by the Security Provider.

**Article 11:**

The Mortgage Contract and, during the term of the Subordination Agreement, the Subordination Agreement, shall be binding on and inure to the benefit of the Security Provider and the Security Taker and their respective permitted successor, assignee and transferee. The Security Taker may assign or transfer to any successor, assignee or transferee any and all of the Security Taker's rights and obligations under this Mortgage Contract without consent from the Security Provider, provided that: (i) such assignment or transfer arises out of or in connection with the reorganisation, restructuring, privatization and/or reincorporation of the Security Taker or other governmental organisations associated with the electricity generation, transmission, supply and distribution industry in Thailand; (ii) the Security Taker shall procure that the Security Provider is notified of such assignment or transfer; and (iii) any such successor, assignee or transferee agrees to, during the term of the Subordination Agreement, assume the rights and obligations of the Security Taker under the Subordination Agreement.

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**Article 12:**

This Mortgage Contract is signed in English and shall be governed by the laws of the Lao PDR.

This Mortgage Contract has [6] pages and an attachment (i.e. the CD Rom referred to in Article 1) and is signed in three (3) originals.

Vientiane, Date \_\_\_\_\_

[],  
**as Security Provider**

**Electricity Generating Authority of Thailand**  
**as Security Taker**

By its Authorised Signatory

By its Authorised Signatory

\_\_\_\_\_

\_\_\_\_\_

[Name]

[Name]

[Position]

[Position]

OK.



Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

Witnesses to signature by both parties

1. \_\_\_\_\_

Name: [ ]

Position: [ ]

Address:

[ ]

[ ]

2. \_\_\_\_\_

Name: [ ]

Position: [ ]

Address:

Electricity Generating Authority of  
Thailand

53 Charansanitwong Road, Bang Kruai,  
Nonthaburi 11130, Thailand

3. \_\_\_\_\_

Name: [ ]

Position: [ ]

Address:

4. \_\_\_\_\_

Name: [ ]

Position: [ ]

Address:

Acknowledgement of Authority

Vientiane Land Management Office

OK .



**Part II: Insurance Assignment**

**Insurance Assignment**

*BETWEEN*

□

*AND*

*ELECTRICITY GENERATING AUTHORITY OF THAILAND*

**RELATING TO THE PROCEEDS OF CERTAIN TYPES OF INSURANCE  
COVERAGE REQUIRED FOR A HYDROELECTRIC POWER PLANT PURSUANT  
TO A POWER PURCHASE AGREEMENT BETWEEN THE COMPANY AND  
EGAT.**

**XAYABURI HYDROELECTRIC POWER PROJECT**

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APR

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OK.

*[Handwritten signature]*

**THIS DEED OF ASSIGNMENT is made on** []

**BETWEEN:**

- (1) []; and
- (2) **ELECTRICITY GENERATING AUTHORITY OF THAILAND**, a state enterprise organized under the laws of Thailand, whose office is situated at 53 Charansanitwong Road, Bang Kruai, Nonthaburi 11130, Thailand (“EGAT”);

(each being referred to individually as a “**Party**” and together as the “**Parties**” hereunder).

**RECITALS:**

- (a) Pursuant to the power purchase agreement executed by EGAT and the Company dated [ ] (the “**Power Purchase Agreement**”), the Company has agreed to develop, own and operate the Generator System and to supply to EGAT, and EGAT has agreed to purchase from the Company, generating capacity and electrical energy from the Generator System and each Party has agreed to make the payments and to perform the other obligations required of it in accordance with the terms and conditions of the Power Purchase Agreement.
- (b) This Deed of Assignment (the “**Assignment**”) is entered by the Parties in accordance with the requirements of Section 18.3.4(a) of the Power Purchase Agreement.

**NOW THIS DEED OF ASSIGNMENT WITNESSES as follows:-**

## **1. DEFINITIONS AND INTERPRETATIONS**

### **1.1 Definitions**

Unless otherwise defined herein, capitalized terms used herein shall have the same meanings as set forth in the Power Purchase Agreement or the Subordination Agreement (defined below), as the context requires. For purposes of this Assignment (including the Recitals), the following capitalized terms shall have the following meanings:

- (a) **Acknowledgement of Assignment** means the written acknowledgement that acknowledges the receipt of the Notice of Assignment, executed by one or more of the Insurers and substantially in the form set out in Part 2 of Schedule 2 of this Assignment;
- (b) **Assigned Assets** means (to the extent capable of assignment) all the Company’s right, title and interest in, under and pursuant to the Insurances and all monies paid to, or recovered or received by the Company under and pursuant to the Insurances (including the net proceeds of any claims, awards or judgments and any return of premiums in each case paid to, recovered or received by the Company);

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

- (c) **Common Term Agreement** means the common terms agreement dated [ ] and entered into between, amongst others, the Company, the Security Agent and the banks and financial institutions referred to therein;
- (d) **Endorsements** means the endorsements to the Insurances specified in the Appendix to the Notice of Assignment;
- (e) **Financing Documents** shall have the meaning set forth in the Subordination Agreement.
- (f) **Insurances** means the insurance policies or cover notes set out in Schedule 1 of this Assignment and any other insurances which the Company may from time to time have, to the extent that the same are required under the Power Purchase Agreement, together with all policies supplementing, amending, novating or replacing the same, and including any renewals thereof in each case immediately upon the same being effected;
- (g) **Insurers** means the insurers underwriting the Insurances, and **Insurer** means any one of the Insurers;
- (h) **Liabilities** means all moneys, debts and liabilities or other sums which now are or at any time hereafter may be or become due, owing or incurred by the Company to EGAT under the Power Purchase Agreement or under this Assignment and all costs, charges and expenses incurred by EGAT in enforcing or seeking to enforce this Assignment and the Security expressed to be created hereunder;
- (i) **Notice of Assignment** means the written notice provided by EGAT, the Company and [ ] (the **Security Agent**) to one or more of the Insurers, substantially in the form set out in Part 1 of Schedule 2 of this Assignment, informing such Insurers that:
- (aa) the Company has assigned the Assigned Assets to EGAT and the Security Agent pursuant to this Assignment and the Financing Documents, respectively; and
- (bb) the Company's exercise of any and all of its Rights in relation to the relevant Insurances is subject to the terms of that written notice;
- (j) **Power Purchase Agreement** shall have the meaning set forth in the Recitals hereto.
- (k) **Rights** includes rights, authorities, discretions, remedies, consents and power (in each case, of any nature whatsoever);
- (l) **Security** means any mortgage, pledge, lien, hypothecation, security interest or other charge or encumbrance or grant of equitable interest whatsoever or

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

howsoever arising securing any obligation of the Company or any other agreement or arrangement having like effect;

- (m) **Security Agreement** means the security agreement dated [ ], [ ] and entered into between the Security Agent and the Company;
- (n) **Security Enforcement Notice** means the written notice issued by EGAT to one or more of the Insurers, substantially in the form set out in Schedule 3 of this Assignment, informing such Insurers that EGAT is exercising its right to enforce its Security over the Assigned Assets in accordance with this Assignment; and
- (o) **Subordination Agreement** means the subordination agreement dated [ ], [ ] and entered into between EGAT, the Company and the Security Agent in relation to the respective Rights of the Lenders and EGAT regarding the Assigned Assets.

References to EGAT, the Security Agent and the Company shall include their respective successors and permitted assigns.

## 1.2 References to Documents

Except where the context otherwise requires, any reference to this Assignment or any other agreement, document or instrument is a reference to this Assignment or, as the case may be, the relevant agreement, document or instrument as from time to time amended, supplemented or novated as permitted thereunder and includes a reference to any agreement, document or instrument which so amends, supplements or novates or is entered into, made or given pursuant to, or in accordance with, any of the terms of this Assignment or, as the case may be, the relevant agreement, document or instrument.

## 1.3 Clauses

A reference to a Clause is, unless otherwise indicated, a reference to a Clause of this Assignment.

## 1.4 Headings

Headings shall be ignored in construing this Assignment.

## 1.5 Singular and Plural

Except where the context otherwise requires, words denoting the singular number only shall include the plurals and vice versa.

## 1.6 Writing

The words “written” and “in writing” include any means of visible reproduction.

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## 2. ASSIGNMENT

### 2.1 Assignment of Rights

For good and valuable consideration and as Security granted to and in favor of EGAT to secure the discharge of the Liabilities, but which shall be ranked second and subordinated to the interests of the Lenders in accordance with, and to the extent required by, the terms of the Subordination Agreement, the Company hereby assigns to EGAT, and EGAT hereby accepts the assignment of, all the Company's right, title and interest (present and future) in and to the Assigned Assets as security for the payment and discharge of the Liabilities, provided, however, that the foregoing assignment by the Company is subject to the Lenders' first ranking security over the Assigned Assets in accordance with, and to the extent required by, the terms of the Subordination Agreement.

### 2.2 Negative Pledge

The Company will not create or have outstanding any Security on over or with respect to any of the Assigned Assets other than pursuant to this Assignment and the Financing Documents.

### 2.3 Continuing Obligations of the Company

Notwithstanding the assignment pursuant to Clause 2.1 hereof, the Company shall at all times remain liable to: (a) perform all of its obligations under the Insurances; and (b) perform all of its obligations to EGAT under the Power Purchase Agreement. Nothing herein or therein contained shall be construed as an assumption or acceptance by EGAT of any obligation of the Company thereunder or in relation to the Insurances and the entitlement of the Company to the proceeds thereof.

### 2.4 Insurance Proceeds

If the Company receives payment of any monies hereby assigned, subject to the requirements of the Subordination Agreement and any rights or remedies thereunder, the Company will apply such monies as the Company receives as the result of the insurance claims filed with relevant insurers under the Assigned Assets toward the repair, reconstruction and replacement of the damaged portion of the Generator System in accordance with the requirements of the Power Purchase Agreement.

## 3. CONTINUING ASSIGNMENT

### 3.1 Security Additional

This Assignment shall be in addition to, independent of, without prejudice to and shall neither be in substitution for nor merge with any other Rights or Security, now held or which may hereafter be held by or for EGAT including (without limitation) the benefit of all rights and claims under the Power Purchase Agreement.

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### 3.2 Continuing Assignment

This Assignment shall remain in full force and effect notwithstanding the dissolution, bankruptcy or other incapacity of the Company, or any change in the constitution or the amalgamation or reconstruction, of the Company unless and until the Liabilities that are secured by this Assignment have been satisfied, released or are otherwise no longer outstanding, in which case the provisions of Clause 11 shall apply.

### 3.3 Conditions of Release

Any release, settlement, discharge or termination of this Assignment shall, unless otherwise agreed in writing by EGAT, be upon the express condition that such release, settlement, discharge or termination shall become void and of no effect and Clause 3.2 shall apply if any Security or payment on the faith of which such release, settlement, discharge or termination is given or made shall at any time thereafter be nullified or avoided and any relevant moneys received by EGAT shall have been returned to the Company by virtue of any bankruptcy, insolvency or liquidation of the Company.

## 4. COVENANTS

The Company covenants with EGAT (for the benefit of EGAT) that it will, subject to the terms of the Subordination Agreement:-

- (a) promptly upon execution hereof, execute and deliver a Notice of Assignment to each Insurer and procure that the relevant Endorsements are (in so far as not already so endorsed) endorsed on each policy in respect of the Insurances and use reasonable endeavours to procure that each such Insurer executes the Acknowledgment of Assignment as soon as reasonably practicable after the receipt of the Notice of Assignment and returns such Acknowledgement of Assignment to EGAT, the Security Agent and the Company; and
- (b) promptly upon the entry into of new or additional Insurances hereunder, execute and deliver a Notice of Assignment to each Insurer and procure that the relevant Endorsements are endorsed on the policy in respect of such Insurances and use reasonable endeavors to procure that each such Insurer executes the Acknowledgement of Assignment as soon as reasonably practicable after receipt of the Notice of Assignment and returns the Acknowledgement of Assignment to EGAT, the Security Agent and the Company.

## 5. ENFORCEMENT

### 5.1 No Obligation to Take Action

EGAT shall not be under any obligation to exercise any Rights conferred upon it by or pursuant to this Assignment or applicable law or to make any inquiry as to the nature or the sufficiency of any payment received by it or to make any claim or to

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take any other action to enforce any Rights assigned to EGAT under this Assignment or to make any claim in respect of any amount due and payable to EGAT, or which may become payable to EGAT, under applicable law or to which it may at any time be entitled.

## 5.2 Security Enforcement

EGAT shall not exercise its rights to the Assigned Assets by the issuance of a Security Enforcement Notice to any Insurer except in accordance with the terms of the Subordination Agreement. Subject to Clause 18, upon a Security Enforcement Notice having been given to an Insurer underwriting any Insurance that is an Assigned Asset, that Insurer shall pay to EGAT any and all proceeds to which the Company is or becomes entitled pursuant to that Insurance. The Company shall remit to EGAT as promptly as possible any insurance proceeds that it has received to which EGAT is entitled pursuant to this Assignment and for which EGAT has issued a Security Enforcement Notice to the relevant Insurer in accordance with the requirements of this Assignment.

## 6. ADDITIONAL PROVISIONS

### 6.1 Actions of EGAT

If the Company fails to pay any premium or fee to an Insurer within thirty (30) days after having received written direction from EGAT to pay a premium or fee to any Insurer regarding the Assigned Assets that is at the time of such written direction due and owing to such Insurer, EGAT may (but shall not be obligated to) pay such premium or fee to that Insurer and the Company shall reimburse EGAT for such payment upon written demand by EGAT.

### 6.2 Exercise of Rights

The Company shall continue to exercise all the Company's Rights in, under and in connection with the Insurances, provided that such exercise shall at all times be in accordance with the terms of the Power Purchase Agreement, this Assignment and the Financing Documents, but such authority shall cease upon the giving of a Security Enforcement Notice (but not otherwise).

## 7. LIMITATIONS ON LIABILITY

EGAT shall not be liable to the Company for any loss, cost, expense, liability or damage by reason of: (a) any act, default or omission of EGAT in relation to the Assigned Assets; or (b) any exercise or non-exercise by EGAT, its officers, employees or agents of any Rights conferred upon it in relation to this Assignment or the Assigned Assets by or pursuant to this Assignment, except where such loss, cost, expense, liability or damage arises by reason of the willful default or negligence of, or material breach of the Power Purchase Agreement by, EGAT, its officers, employees or, as the case may be, agents.

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## 8. FURTHER ASSURANCE

- 8.1 Subject to the requirements set forth in the Subordination Agreement, the Company shall promptly at its own expense execute and do all such assurances, acts, deeds and things as EGAT may at any time and from time to time reasonably request, including the execution of further security or other legal instruments and documentation, as reasonable required by EGAT for the purpose of:
- (a) perfecting such securities created in favour of EGAT in respect of the Assigned Assets under this Assignment;
  - (b) protecting the Rights conferred on EGAT by this Assignment;
  - (c) obtaining the full benefit of this Assignment and of the powers herein;
  - (d) facilitating the realisation of the Assigned Assets; and
  - (e) accommodating any change in the laws of the Lao PDR that could be reasonably be interpreted upon the advice of Lao legal counsel as potentially having a material adverse effect on the legality or enforceability of this Assignment.
- 8.2 Notwithstanding Clause 10, the Company hereby agrees to indemnify EGAT upon demand against any reasonable costs, losses, expenses, damages or liabilities (including without limitation any stamp duty or other registration tax or charge of any nature which may be payable in the Lao PDR or any other jurisdiction) incurred or suffered by EGAT in, or in respect of, any action required to have been taken by EGAT to achieve the purposes set forth in Clause 8.1.

## 9. POWER OF ATTORNEY

### 9.1 Power of Attorney

The Company hereby by way of security irrevocably appoints EGAT, with full power to act alone, to be its attorney and in its name and on its behalf, with respect to any Insurance that constitutes part of the Assigned Assets following the issuance of a Security Enforcement Notice to the Insurer by EGAT, to execute and as its act and deed or otherwise to do all such assurances, acts or things which the Company is required to do under the covenants and provisions contained in this Assignment and generally in its name and on its behalf to exercise and/or protect all or any of the Rights conferred by or pursuant to this Assignment on EGAT.

### 9.2 Ratification

The Company ratifies and confirms and agrees to ratify and confirm whatever any such attorney as is mentioned in Clause 9.1 shall do or purport to do in the exercise or purported exercise of all or any of the Rights referred to therein.

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## 10 COSTS

- 10.1 The Company shall indemnify and hold harmless EGAT on demand from and against any and all reasonable costs, charges, expenses (including without limitation legal expenses) and other sums including taxes thereon incurred by EGAT in connection with the realisation or enforcement of, or the collection and recovery of any money from time to time arising under, this Assignment.
- 10.2 The Company shall pay or repay to EGAT (as the case may be) all stamp duty or other registration tax or charge of any nature which may be payable in the Lao PDR or in any other jurisdiction in connection with the enforcement of this Assignment such securities created in favour of EGAT under this Assignment and shall on demand indemnify EGAT against any liabilities, costs, claims and expenses (including legal fees) resulting from any failure to pay or delay in paying any such tax.

## 11. REASSIGNMENT AND RELEASE

After all of the Liabilities have been irrevocably and unconditionally discharged and paid in full, EGAT shall at the request and expense of the Company execute and do all such deeds, acts and things as may be necessary to reassign or otherwise release to the Company the right, title and interest of EGAT in the Assigned Assets together with all proceeds derived therefor after application and not otherwise appropriated towards the discharge of such Liabilities.

## 12 REMEDIES, WAIVERS AND AMENDMENTS

### 12.1 Remedies Cumulative

No failure on the part of EGAT to exercise, and no delay on its part in exercising, any right or remedy under this Assignment will operate as a waiver thereof, nor will any single or partial exercise of any Right or remedy preclude any other or further exercise thereof or the exercise of any other Right or remedy. The Rights and remedies provided in this Assignment are cumulative and not exclusive of any Rights or remedies (whether provided by law or otherwise).

### 12.2 Amendments and Waivers

No provision of this Assignment may be amended, supplemented or waived by any Party except as permitted under Sections 17.1 and 17.2 of the Power Purchase Agreement, which shall apply mutatis mutandis to this Assignment. Any amendment or waiver so agreed shall be binding on the Parties. Any waiver shall be effective only in the instance and for the purpose for which it is given.

### 12.3 Partial Invalidity

The illegality, invalidity or unenforceability of any provision (or any part of any provision) of this Assignment under the law of any jurisdiction shall not affect its legality, validity or enforceability under the law of any other jurisdiction nor the

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legality, validity or enforceability of any other provision or the remaining part of the same provision. The illegality, invalidity or unenforceability of this Assignment in relation to any particular Insurances or coverage referred to hereunder shall not affect its legality, validity or enforceability in respect of any other Insurance or coverage.

### 13 NOTICES

#### 13.1 Address for Delivery of Notice

Any notice or other communication to be given by one Party to the other Party under, or in connection with the matters contemplated by, this Assignment shall be sent to the address and/or facsimile number given and marked for the attention of the person specified below or to such other address and/or facsimile number of such Party and/or marked for such other attention as it shall from time to time designate by written notice to the other Party.

**The Company:**

Address: 215 Lane Xang Avenue, Ban Xieng Yuen, Vientiane  
Lao PDR

Facsimile Number: 856 (0) 21 215 500

Attention: Chief Executive Officer

**EGAT:**

Address: 53 Charansanitwong Road, Bang Kruai, Nonthaburi 11130,  
Thailand

Facsimile Number: (662) 433-6317 / (662) 433-5523

Attention: Governor

#### 13.2 Deemed Delivery

Any notice or other communication to be given by one Party to the other Party under, or in connection with the matters contemplated by, this Assignment shall be in the English language and shall be given by letter delivered by hand (including by courier) or sent by first class prepaid post (airmail if from one country to another) or facsimile transmission, and shall be deemed to have been delivered to and received by such Party:

- (a) in the case of delivery by hand, when actually received;
- (b) in the case of first class prepaid post, on the third day following the day of posting or, if sent by airmail from one country to another, on the sixth day following the day of posting; or

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(c) in the case of facsimile transmission at the time of dispatch;

and, in proving service of any notice, it will be sufficient to prove, in the case of a letter, that such letter was properly stamped, addressed and placed in the post and, in the case of a fax, that such fax was duly dispatched to the fax number specified pursuant to Clause 13.1 of this Assignment, evidenced by the facsimile transmission report generated by the sending fax machine recording that the transmission was duly dispatched. It shall in any event be a condition of valid giving of notice by fax that the sender retains the transmission report for future reference and inspection.

#### 14. **BENEFIT AND BURDEN**

Neither the Company nor EGAT may assign, transfer, novate, sub-participate, sub-divide, sell or otherwise dispose of all or any part of the benefit or the burden of this Assignment to any Person.

#### 15. **COUNTERPARTS**

This Assignment may be executed in any number of counterparts, all of which when taken together shall constitute one and the same instrument. Each Party may enter into this Assignment by signing any such counterpart.

#### 16. **GOVERNING LAW AND WAIVER OF SOVEREIGN IMMUNITY**

##### 16.1 **Governing Law**

This Assignment shall be governed by and construed in accordance with the laws of Thailand.

##### 16.2 **Waiver of Immunity**

To the extent that either Party may be or hereafter becomes entitled, in any jurisdiction, to claim for itself or its property, assets or revenues immunity (whether by reason of sovereignty or otherwise) in respect of its obligations under this Assignment from service of process, suit, jurisdiction of any court, judgment, order, award, attachment (before or after judgment or award), set-off, execution of a judgment or other legal process, and to the extent that in any such jurisdiction there may be attributed to either Party or to any of such Party's property, assets or revenues such an immunity (whether or not claimed), each Party hereby irrevocably agrees not to claim and hereby irrevocably waives such immunity to the fullest extent permitted by Law.

#### 17. **DEED**

Each Party intends this document to be a deed and executes and delivers it as a deed.

#### 18. **SUBORDINATION AGREEMENT**

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

The terms of this Assignment shall be subject in all respects to the terms of the Subordination Agreement.

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

**IN WITNESS WHEREOF** this Assignment has been executed and delivered as a Deed on the day and year first above written.

EXECUTED as a deed by  
[ ] )  
and signed and delivered as a deed on its behalf by )  
[name] )  
Acting under the authority of that )  
Company, in the presence of: )

Witness's Signature: .....  
Name: .....  
Address: .....

EXECUTED as a deed by  
**ELECTRICITY GENERATING** )  
**AUTHORITY OF THAILAND,** )  
and signed and delivered as a deed on its behalf by )  
[ ], in the )  
presence of: )

Witness's Signature: .....  
Name: .....  
Address: .....  
.....

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**SCHEDULE 1: INSURANCE POLICIES****1. Construction Phase Insurances****(a) Marine Cargo / Transit Cover**

Minimum cover: "All Risks" (including risks of loading and unloading throughout transit) of physical loss of or damage to plant, equipment, components and materials intended for incorporation in the Project Works (whether of a temporary or permanent nature) or otherwise for works or temporary works comprising the Project Facility from any external cause during air, marine or inland transit for its final journey from suppliers' warehouses to its intended destination until it arrives at that intended destination within the Lao PDR (or, where the relevant plant, equipment, components or materials are not required to be delivered to a destination within the Lao PDR, Thailand) including war, strikes, riots and civil commotion, such cover to be placed on an automatic (rather than declaration) basis.

Minimum sum insured: Not less than USD [ ] per shipment.

**(b) Construction All Risks Cover (CAR)**

Minimum cover: "All Risks" of physical loss of or damage to the permanent or temporary Project Works, materials and equipment for incorporation therein, temporary building and contents and construction plant and equipment (other than plant and equipment which the EPC Contractor will have responsibility to insure or self-insure under the EPC Contract) specified in the policy (such specification to be acceptable to the Intercreditor Agent (acting on the advice of the Insurance Adviser)) owned or hired by the Company and used in respect of the permanent or temporary Project Works.

Minimum sum insured: USD [ ], as amended from time to time to reflect increases in the Contract Price in relation to the works contemplated under the EPC Contract and any other increases in value in relation to the project works comprising the Xayaburi Hydroelectric Power Plant (as defined in the Concession Agreement) other than the works contemplated under the EPC Contract which are determined by the Technical Adviser.

**(c) Terrorism Cover**

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

Terrorism cover, if and to the extent it is effected, in respect of physical loss and to compensate for Delay in Start-Up following a risk insured under that terrorism cover on terms and subject to maximum premia levels as agreed between the Finance Parties and the Company.

## (d) Delay in Start Up (Following Marine Cargo and CAR)

Minimum cover: Financial loss sustained directly or indirectly as a result of any occurrence covered by the marine cargo policy and/or the CAR policy described in paragraphs (a) and (b) above which causes delay in the start of commercial operations.

Minimum sum insured: An amount not less than the aggregate of:

- (a) the debt servicing costs of the Company to the Finance Parties; and
- (b) all amounts payable in respect of the policy indemnity period as a consequence of such delay by way of fixed expenses and pre-operating costs, contractual payment obligations (including penalties, liquidated damages and Force Majeure Offset Amounts), interest, default interest and extension payments less minimum testing and commissioning revenues.

Indemnity period: Delay following marine cargo risk: 12 months minimum.

Delay following CAR risk: 18 months minimum.

## (e) Public Liability Insurances

Minimum cover: Occurrence-based insurance in respect of all sums which any insured becomes liable to pay in respect of legal liability to third parties for:

- (a) death or bodily injury, or
- (b) damage to third party property,

arising out of the design, procurement, engineering, development, installation, erection, testing, commissioning ownership, construction, operation, exploitation, extension and maintenance of the Xayaburi Hydroelectric Power Plant (as defined in the Concession Agreement), and professional costs (including legal defence costs) and expenses incurred in dealing with any claim.

Minimum sum insured: For any one occurrence USD [ ].

## (f) Other insurances

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

- (i) Insurances required by law to cover liability for the accidental death or injury of employees of the Company and the EPC Contractor during the course of employment in connection with the Project anywhere in Laos.
- (ii) Motor insurance as required to be placed by relevant local law.
- (iii) Other insurances which the Company is required to place in the construction phase under applicable law, in accordance with any Project Document or which would be taken out by a prudent international owner / developer of a hydro electric power station comparable to the Project.

**2. Operating Phase Insurances**

- (a) All Risks (including machinery breakdown)

Minimum cover: "All Risks" of physical loss of or damage to all real and personal property (including, but not limited to, the buildings, structures, equipment, spares and consumables, tunnels and dam canals) comprising the Xayaburi Hydroelectric Power Plant (as defined in the Concession Agreement), unless not of an insurable nature as commonly accepted by the international insurance industry (such as, for example, transmission lines).

Minimum sum insured: The sums insured in respect of physical loss of or damage to the Project Facility, the Project Works (whether such Project Works are of a temporary or permanent nature), and any equipment, machinery, materials and goods at the Project Land must, at all times, be maintained by the Company in an amount equal to the value of the Project Works as determined by the Technical Adviser as at the date of the Power Station Taking Over Certificate or such lower amount as may be agreed to by the Required Lenders (acting in consultation with the Technical Adviser), or when becoming pari-passu or first ranking as relevant, EGAT.

- (b) Terrorism Cover

Terrorism cover, if and to the extent it is effected, in respect of physical loss and to compensate for Business Interruption following a risk insured under that terrorism cover on terms and subject to maximum premia levels as agreed between the Finance Parties and the Company.

- (c) Business Interruption Following All Risks (including machinery breakdown)

Minimum cover: Financial loss sustained directly or indirectly as a result of any occurrence covered by the All Risks policy described in paragraph (a) above which causes interruption to the normal commercial operations of the Project.

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Minimum Sum Insured: An amount not less than the aggregate of:

- (a) the debt servicing costs of the Company to the Finance Parties; and
- (b) all amounts incurred by the Company by way of fixed expenses and operating costs, contractual payment obligations (including penalties, liquidated damages and Force Majeure Offset Amounts), interest, default interest and extension payments unless otherwise agreed by the Required Lenders (acting in consultation with the Insurance Advisor and the Technical Advisor), or when becoming pari-passu or first ranking as relevant, EGAT,

in each case during the indemnity period.

Indemnity period: 18 months minimum.

(d) Public Liability Insurances

Minimum cover: Occurrence-based insurance in respect of all sums which any insured becomes liable to pay in respect of legal liability to third parties for:

- (a) death or bodily injury, or
- (b) damage to third party property,

arising out of the ownership, construction, operation, and maintenance of the Xayaburi Hydroelectric Power Plant (as defined in the Concession Agreement), and professional costs (including legal defence costs) and expenses incurred in dealing with any claim.

Minimum sum insured: For any one occurrence USD [ ].

(e) Other insurances

- (i) Insurances required by law to cover liability for the accidental death or injury of employees of the Company during the course of employment in connection with the Project anywhere in Laos.
- (ii) Motor insurance as required to be placed by relevant local law.
- (iii) Other insurances which the Company is required to place in the construction phase under applicable law, in accordance with any Project Document or which would be taken out by a prudent international owner / developer of a hydro electric power station comparable to the Project.

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**SCHEDULE 2 - FORM OF NOTICES OF ASSIGNMENT,  
ENDORSEMENT AND ACKNOWLEDGEMENT OF  
ASSIGNMENT**

**PART 1**

**NOTICE TO INSURER(S)**

From: Xayaburi Power Company Limited (the **Company**)

[*Security Agent*] (the **Security Agent**)

and

Electricity Generating Authority of Thailand (**EGAT**)

To: [*Insurer*] (the **Insurer**)

[ ], []

Dear Sirs,

[*Details of Policies*] (each a **Policy** and together the **Policies**)

This letter constitutes notice to you that:

- (a) under the Security Agreement dated [ ], [] (the **Lender Security Agreement**) between the Company and the Security Agent, the Company has, amongst other things, assigned to the Security Agent all of the Company's rights, title and interests, present and future, in each Policy and all sums payable or which may become payable under each Policy or in relation thereto from time to time and the debts represented thereby and including the full benefit of all rights, remedies, rights to make claims, proceeds of claims, awards or judgements, returns of premiums under or in respect of each Policy (the **Security Assets**); and
- (b) under a second ranking assignment of insurances dated [ ], [] (the **EGAT Security Agreement**) between the Company and EGAT, the Company has (subject to the first ranking security provided to the Finance Parties pursuant to the Lender Security Agreement) assigned the Security Assets to EGAT.

Unless otherwise defined in this notice (either directly or by cross-reference to another document), capitalised terms used in this notice shall have the meanings given to them in the [Common Terms Agreement] (as defined in the Lenders Security Agreement).

References to a **Policy** include any amendment, renewal or replacement of that Policy.

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*[Signature]*

Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

EGAT's rights to the Security Assets under the EGAT Security Agreement are subordinated to the rights of the Finance Parties to the Security Assets under the Lender Security Agreement, subject to and pursuant to a subordination agreement dated [ ], [ ] between the Company, EGAT and the Security Agent (the **EGAT Subordination Agreement**).

The Company has contracted with the Security Agent that each Policy shall at all times until the Final Release Date (as defined in the EGAT Subordination Agreement) contain (amongst other endorsements) the endorsements set out in the Appendix to this notice (the **Endorsements**). Subject to the terms and conditions of the EGAT Subordination Agreement, EGAT hereby agrees to the terms of each Endorsement.

Each of the Company, the Security Agent and EGAT hereby irrevocably instruct and authorise you to:

- (a) disclose to the Security Agent (until the Final Release Date only) and EGAT any information relating to any Policy or any claim under it; and
- (b) comply with the terms of each Endorsement,

without:

- (i) any reference to or further authority from the Company, the Security Agent or EGAT;
- (ii) any inquiry by you as to the justification for or validity of such instructions; or
- (iii) any prior release of security or any other action from EGAT.

In addition you should note that:

- (1) the Company confirms that it will remain liable for all obligations for which it is expressed to be liable under the Security Assets and neither the Security Agent nor EGAT or any of each such party's agents, any receiver or any other person has any liability in respect of the Security Assets;
- (2) all notices issued by you under any Policy must be copied to the Security Agent (until the Final Release Date only) and EGAT, to the following addresses, or to any other address notified to you by the Security Agent or EGAT from time to time for this purpose:

**the Security Agent**

[ ]

**EGAT**

Electricity Generating Authority of Thailand

53 Charansanitwong Road

Bang Kruai

Dk.





Nonthaburi 11130

Thailand

Attention: GOVERNOR

Telephone: (662) 424-2894

(662) 424-8015

Facsimile: (662) 433-4896

(662) 433-1389

(3) the Company has:

(a) on the terms set out in the Lender Security Agreement; and

(b) on the terms set out in the EGAT Security Agreement,

unconditionally and irrevocably appointed an attorney to be the Company's attorney to do (amongst other things) all things which the Company could do in relation to the Security Assets. You are instructed:

(A) until the Senior Debt End Date (as defined in the EGAT Subordination Agreement), to follow instructions given to you by the attorney appointed under the Lender Security Agreement in the event of any conflicting instructions given to you by any other party (including EGAT and the Company);

(B) on and with effect from the Senior Debt End Date until the Final Release Date, to follow instructions given to you jointly by the attorney appointed under the Lender Security Agreement and the attorney appointed under the EGAT Security Agreement in the event of any conflicting instructions given to you by any other party (including the Company); and

(C) after the Final Release Date, to follow instructions given to you by the attorney appointed under the EGAT Security Agreement;

(4) the Company has agreed that it will not amend or waive any provision of or terminate the Policy without the prior consent of:

(A) until the Senior Debt End Date, the Security Agent and, where such amendment, waiver or termination would have the effect of reducing the scope of the relevant insurance or altering or modifying the endorsements thereof, EGAT;

(B) on and with effect from the Senior Debt End Date until the Final Release Date, the Security Agent and EGAT; and

(C) after the Final Release Date, EGAT; and

(5) this notice may not be terminated, amended or varied without the prior written consent of EGAT and, until the Final Release Date, the Security Agent.

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

This letter is governed by the laws of Thailand.

Please confirm your agreement to the above by sending the attached acknowledgement to the Security Agent with a copy to ourselves and EGAT.

Yours faithfully,

\_\_\_\_\_  
For and on behalf of

||

\_\_\_\_\_  
For and on behalf of

**Electricity Generating Authority of Thailand**

\_\_\_\_\_  
For and on behalf of

**[Security Agent]**

OK.

*[Handwritten initials]*

## APPENDIX

### Form of Endorsements

1. The Insurer(s) acknowledge that they have been notified that the Company has assigned by way of first ranking security to the Finance Parties all its rights, title and interest in this insurance and in the subject matter of this insurance, and confirm that, other than the notification under the Security referred to in paragraph 2 below, they have not been notified of any other assignment of a security interest in the Company's interest in this insurance.
  
2. The Insurer(s) further acknowledge that they have been notified that the Company has assigned by way of second ranking security to EGAT all its rights, title and interest in this insurance and in the subject matter of this insurance, and confirm that, other than the notification under the security referred to in paragraph 1 above, they have not been notified of any other assignment of a security interest in the Company's interest in this insurance.

The Insurer(s) acknowledge that the security granted by the Company in favour of EGAT referred to in this paragraph 2 is, until the Senior Debt End Date (as defined in the EGAT Subordination Agreement), subordinated to that in favour of the Finance Parties referred to in paragraph 1 above and that, as such, until the Senior Debt End Date, the Insurer(s) agree to pay insurance proceeds in accordance with paragraph 3 below unless otherwise directed by the Security Agent without any requirement for a release of security or any other action on the part of EGAT. On and with effect from the Senior Debt End Date (but before the Final Release Date), the Insurer(s) acknowledge that any amendments or waivers to the requirements to pay insurance proceeds in accordance with paragraph 3 below must be made on the joint instructions of EGAT and the Security Agent. After the Final Release Date, the Insurer(s) agree to pay insurance proceeds only in accordance with the written instructions of EGAT. All payment of the insurance proceeds shall be made in accordance with paragraph 3 below.

3. For the benefit of the Finance Parties (until the Final Release Date) and EGAT, the insured parties (other than the Finance Parties) irrevocably authorise and instruct the Insurer(s) to pay, and the Insurer(s) agree to pay, all claims, returned premiums and any other moneys payable to any of them, under or in relation to this contract (**Insurance Proceeds**) as follows:
  - (a) [if the sum recoverable is in respect of third party claims to be paid directly to a third party under the relevant Insurance, such sums shall be paid directly to that third party]<sup>1</sup>;
  
  - (b) to the extent that sub-paragraph (a) above does not apply or payments have not been made to the third party or named insured (as the case may be) as contemplated therein, to the following bank accounts of the Company:

<sup>1</sup> Insert only for insurances in respect of third party liability.

Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

Bank name: [ ]

Account name: USD Physical Damage or Loss Proceeds Sub-Account

Account number: [ ]<sup>2</sup>

Or

Bank name: [ ]

Account name: USD Revenue Account

Account number: [ ]<sup>3</sup>

PROVIDED THAT:

- (A) if the Security Agent has notified the Insurer(s) prior to the Senior Debt End Date that the security constituted by the assignment described in paragraph 1 hereof has become enforceable, all such Insurance Proceeds (other than those referred to in paragraph (a) above, which shall be paid in accordance with that paragraph) shall be paid to such account as the Security Agent may specify;
- (B) if EGAT and the Security Agent have jointly notified the Insurer(s) during the period from the Senior Debt End Date until the Final Release Date that the security constituted by the assignment described in paragraphs 1 and 2 hereof has become enforceable, all such Insurance Proceeds (other than those referred to in paragraph (a) above, which shall be paid in accordance with that paragraph) shall be paid to such account as EGAT and the Security Agent may jointly specify;
- (C) if EGAT has notified the Insurer(s) during the period from the Final Release Date that the security constituted by the assignment described in paragraph 2 hereof has become enforceable, all such Insurance Proceeds (other than those referred to in paragraph (a) above, which shall be paid in accordance with that paragraph) shall be paid to such account as EGAT may specify.

Until the Senior Debt End Date no other instruction, whether by the Company, EGAT or by any person other than the Security Agent, to make any payment to any other person or account shall be honoured by the Insurer(s) unless given or countersigned by the Security Agent, or such other person as the Security Agent may notify to the Insurer(s) in writing. On and with effect from the Senior Debt End Date until the Final Release Date, no other instruction, whether by the Company or by any person other than EGAT and the Security Agent, to make any payment to any other person or account shall be honoured by the Insurer(s) unless given or countersigned jointly by the Security Agent

<sup>2</sup> Insert for physical loss insurance proceeds.

<sup>3</sup> Insert for DSU/business interruption proceeds.

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

and EGAT, or such other person as the Security Agent and EGAT may jointly notify to the Insurer(s) in writing. On and with effect from the Final Release Date, no other instruction, whether by the Company or by any person other than EGAT, to make any payment to any other person or account shall be honoured by the Insurer(s) unless given or countersigned by EGAT, or such other person as EGAT may notify to the Insurer(s) in writing. All such payments shall be made by the Insurer(s) without any deduction or set-off on any account or of any kind. Any monies received by the Insurer(s) from any facultative reinsurers of the risks insured under this policy shall be received and held by the Insurer(s) in trust for the relevant claimant Insured. A payment to the loss payee in accordance with this paragraph shall, to the extent of that payment, discharge the liability of the Insurer(s) to pay the Company or other claimant insured party (including EGAT but only when such payment to the loss payee is made to the Security Agent during the period prior to the Senior Debt End Date). [Each payment by the Insurer(s) to a third party of a claim against the Company under the Insurance shall be applied directly to discharge fully and finally an insured liability of the Company to that third party]<sup>4</sup>. The arrangements in this clause shall continue to apply notwithstanding the liquidation or insolvency of the Company or the Insurer(s).

Without prejudice to the generality of the foregoing, notwithstanding any security over the relevant insurance policy or Insurance Proceeds which may exist in favour of EGAT, until the Senior Debt End Date, no countersignature shall be required to be given by EGAT before a payment is made by the Insurer(s) in accordance with this loss payee clause.

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<sup>4</sup> Insert only for insurances in respect of third party liability.

**PART 2****ACKNOWLEDGEMENT FROM INSURER(S)**

To: (1) [*Security Agent*] as Security Agent (the **Security Agent**)

(2) Xayaburi Power Company Limited (the **Company**)

and

(3) Electricity Generating Authority of Thailand (**EGAT**)

[ ], [ ]

Dear Sirs,

**[Details of Policies] (the Policies)**

We confirm receipt from the Company, the Security Agent and EGAT of a notice dated [ ], [ ] (the **Notice**) of:

- (a) a first ranking security assignment in favour of the Security Agent on the terms of a Security Agreement dated [ ], [ ] (the **Lender Security Agreement**); and
- (b) a security assignment in favour of EGAT on the terms of a second ranking assignment of insurances dated [ ], [ ] (the **EGAT Security Agreement**),

in each case in respect of the Company's rights in respect of each of the Policies (the **Security Assets**). We have noted the instructions in the Notice.

Unless otherwise defined in this Acknowledgement, capitalised terms used in this Acknowledgement have the meanings given to them in the subordination agreement dated [ ], [ ] between the Company, EGAT and the Security Agent (the **EGAT Subordination Agreement**).

We consent to the assignment of the Security Assets under the Lender Security Agreement and under the EGAT Security Agreement.

We confirm that:

- (a) as at the date of this acknowledgment, we have not received notice of the interest of any third party in any Policy;
- (b) we will pay all sums due and give notices under the Policy:
  - (A) until the Senior Debt End Date, as directed in the Notice and the form of endorsement appended to it without seeking any prior release of security or any other action from EGAT;

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- (B) on and with effect from the Senior Debt End Date until the Final Release Date, as directed in the Notice and the form of endorsement appended to it but subject to the joint written instructions of the Security Agent and EGAT; and
- (C) on and after the Final Release Date, in accordance with the written instructions of EGAT;
- (c) we will follow all other instructions under the Notice;
- (d) we regard the Company as liable to perform all its obligations assumed under the Policy and that neither the Security Agent nor EGAT is under any obligation of any kind whatsoever under the Policy nor under any liability whatsoever in the event of any failure by the Company to perform its obligations under the Policy;
- (e) as at the date of this acknowledgment, each Policy is in full force and effect;
- (f) as at the date of this acknowledgment, we are not aware of any default under any Policy;
- (g) provided that all premiums due to us in respect of the Policies have been received in full, we will not exercise any right of set-off or counterclaim or deduction of any kind for any reason against any amounts payable under the Policies; and
- (h) we will give no less than sixty (60) days prior written notice of our intention to make any amendment, waiver or release of any of our rights, benefits and interests under the Policy to:
- (A) until the Senior Debt End Date, the Security Agent and, where such amendment, waiver or termination would have the effect of reducing the scope of the relevant insurance or altering or modifying the endorsements thereof, EGAT;
- (B) on and with effect from the Senior Debt End Date until the Final Release Date, the Security Agent and EGAT; and
- (C) on and after the Final Release Date, EGAT; and
- (i) although we retain the right to terminate the Policy following non-payment of premia due and payable under the Policy, we will give not less than ten (10) days written notice to the Security Agent (until the Final Release Date only) and EGAT of our intention to do so before terminating the Policy for such non-payment.

This acknowledgment is governed by the laws of Thailand.

Yours faithfully,

\_\_\_\_\_  
For and on behalf of  
[Insurer(s)]

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## SCHEDULE 3 - FORM OF SECURITY ENFORCEMENT NOTICE

From: Electricity Generating Authority of Thailand (EGAT)

To: [Insurer] (the Insurer)

[ ]

Dear Sirs,

[Details of Policies] (each a Policy and together the Policies)

We refer to:

- (a) the notice of assignment dated [•] (the Notice) delivered to you by SouthEast Asia Energy Limited (the Company), EGAT and [ ] (the Security Agent), notifying you of the Company's assignment to EGAT and the Security Agent of the Policies; and
- (b) your acknowledgement of the Notice dated [•] (the Acknowledgement).

Unless otherwise defined in this notice, capitalised terms used in this notice have the meanings given to them in the Acknowledgement.

You are hereby notified that EGAT is enforcing its security over the Policies in accordance with the terms of the EGAT Security Agreement. Accordingly, any and all proceeds to which the Company is or becomes entitled pursuant to the Policies from and after the date of this notice shall be paid by you to or at the instruction of EGAT and you shall not accept any further instructions from any person in connection with the Policies other than EGAT.

Yours faithfully,

\_\_\_\_\_  
For and on behalf of  
Electricity Generating Authority of Thailand

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### Part III: Subordination Agreement

**THIS SUBORDINATION AGREEMENT**, dated [ ] (this **Agreement**), is entered into by **Electricity Generating Authority of Thailand**, a state enterprise organized under the laws of Thailand (**EGAT**), [ ], a company incorporated under the Laws of Thailand (the **Borrower**) and [ ] as agent and trustee for the Lenders (the **Security Agent**) pursuant to Section 9.4.4 of the Power Purchase Agreement between the Borrower and EGAT dated [ ], [ ] as amended and in effect from time to time (the **Power Purchase Agreement**).

It is intended that this document takes effect as a deed notwithstanding the fact that a party may only execute this document under hand.

1. **Definitions.** In this Agreement, capitalized terms not otherwise defined have the meaning given to them in the Power Purchase Agreement, and the following terms have the following meanings:

**EGAT Debt Amount** means all amounts from time to time owing by the Borrower to EGAT under the Power Purchase Agreement and secured by the EGAT Security.

**EGAT Security** means:

- (a) the second ranking mortgages over the Generator System (including the Facility, buildings, equipment, machinery, real property assets and all improvements to the Site) to secure the Borrower's performance of its obligations to EGAT under the Power Purchase Agreement up to an amount equal to [four thousand and five hundred million (4,500,000,000)] Baht, executed by the Borrower in favour of EGAT, pursuant to Section 9.4.1 of the Power Purchase Agreement; and
- (b) an assignment over the Insurances and all monies paid to, or recovered or received by the Borrower under or pursuant to the Insurances to secure the Borrower's performance of its obligations to EGAT under the Power Purchase Agreement executed by the Borrower in favour of EGAT, pursuant to Section 18.3.4 of the Power Purchase Agreement.

**EGAT Security Document** means each document by or pursuant to which the EGAT Security is created as such document may be amended or modified from time to time, including any replacement document executed as contemplated by Clause 9.

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**Final Release Date** means the date on which both the Senior Debt Amount and the Pari Passu Debt Amount have been unconditionally satisfied in full.

**Financing Document** means each of the following:

- (a) any agreement or agreements for debt financing incurred by the Borrower for the development, construction, operation, maintenance and repair of the Generator System (including working capital), as set out in Annex 1;
- (b) any agreement or agreements for additional debt financing incurred by the Borrower after the Financial Close Date for additional working capital and capital repairs, modifications and/or improvements required by the Power Purchase Agreement, in each case, as a result of a Force Majeure, a Change of Grid Code and/or a Change-in-Law; and
- (c) any other agreement or agreements entered into by the Borrower after the Financial Close Date for the purposes of providing additional finance to the Borrower provided that:
  - (i) such additional finance constitutes "Debt" for the purposes of paragraph (d) of the definition of Debt in the Power Purchase Agreement and EGAT shall have received written notice from the Borrower not less than thirty (30) days prior to the execution of such agreement or agreements specifying in reasonable details the terms and conditions of such agreement or agreements; or
  - (ii) such additional finance constitutes any amount owing by the Borrower to the Finance Parties as a result of any drawing or drawings by EGAT under the Performance Security; or
  - (iii) EGAT has otherwise provided its prior written consent to the agreement or agreements,

in each case, as the same may be amended or modified from time to time, provided that any such amendment or modification shall not result in an increase in the Senior Debt Amount or an increase in the amount of interest payable by the Borrower in respect of the Senior Debt Amount. For the avoidance of doubt, any agreement or agreements for additional debt financing incurred by the Borrower after the Financial Close Date or any other agreement or agreements entered into by the Borrower after the Financial Close Date for the purpose of providing additional finance other than those provided in paragraphs (a), (b) or (c) above shall not constitute Financing Documents.

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**Finance Party** means a financial institution (including its successor, transferee or assignee) that is a party to any Financing Document and any trustee or agent acting for and on behalf of such financial institution.

**Insolvency Proceeding** means:

- (a) any presentation of a petition or filing of documents with a court or registrar or any proceeding for any receivership, administration, official management, scheme of arrangement, winding-up, liquidation, dissolution or other winding-up of the Borrower, voluntary or involuntary, whether or not involving insolvency or bankruptcy proceedings;
- (b) the making of any order for any receivership, administration, official management, scheme of arrangement, winding-up, liquidation or dissolution of the Borrower; or
- (c) any assignment for the benefit of creditors of the Borrower,

in each case, under the laws of the Lao PDR or any other jurisdiction.

**Insurances** means the insurance policies set out in Annex 2 and any other insurance policies which the Borrower may from time to time take out and maintain, to the extent required under the Power Purchase Agreement, together with all policies supplementing, amending, novating or replacing the same, and including any renewals of such policies, in each case immediately upon the same being effected.

**Pari Passu Debt Amount** means any amount that remains owing by the Borrower to the Finance Parties under the Financing Documents and secured by the Senior Liens on and following the Scheduled Final Repayment Date.

**Scheduled Final Repayment Date** means [ ] or such later date as EGAT may, from time to time, approve in writing at the request of the Security Agent.

**Senior Debt Amount** means all amounts from time to time owing by the Borrower to the Finance Parties under the Financing Documents and secured by the Senior Liens prior to the Scheduled Final Repayment Date.

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**Senior Debt End Date** means the earlier of: (a) the date on which the Senior Debt Amount has been unconditionally satisfied in full; and (b) the Scheduled Final Repayment Date.

**Senior Liens** means:

- (a) the first ranking mortgages over the Generator System (including the Facility, buildings, equipment, machinery, real property assets and all improvements to the Site) to secure the Borrower's obligation to repay all amounts owing by the Borrower to the Finance Parties under the Financing Documents; and
- (b) an assignment over the Insurances and all monies paid to, or recovered or received by the Borrower under or pursuant to the Insurances to secure the Borrower's obligation to repay all amounts owing by the Borrower to the Finance Parties under the Financing Documents.

**Senior Security Document** means each document by or pursuant to which any Senior Lien is created as such document may be amended or modified from time to time.

2. **Subordination of EGAT Security.** At all times until the Senior Debt End Date, the EGAT Security in effect from time to time shall be and hereby is expressly made subordinate and junior in right of priority to the Senior Liens to the extent securing the Senior Debt Amount. On and with effect from the Senior Debt End Date until the Final Release Date, the Senior Liens shall rank pari passu with the EGAT Security.

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3. **Subordination Provisions.** At any time until the Senior Debt End Date, EGAT shall register, file and/or certify, as applicable, each EGAT Security Document (including filing at the State Assets Management Department of the Ministry of Finance of the Lao PDR) only after the corresponding Senior Security Document has been registered or filed. The Security Agent shall notify EGAT of the date, time and place at which it proposes to register or file the Senior Security Documents and EGAT and the Security Agent shall cooperate to ensure the registration or filing of the Senior Security Documents prior to the registration or filing of the EGAT Security Documents. EGAT further agrees to register or file any amendment to any EGAT Security Document only after the corresponding amendments, if any, to the Senior Security Documents have been registered or filed with the applicable governmental authorities (including filing at the State Assets Management Department of the Ministry of Finance of the Lao PDR). The Security Agent shall, at the cost of the Borrower, execute such documents and do such other things as may be required by EGAT to enable EGAT, at the cost of the Borrower, to register or file the EGAT Security Documents, including any registration or filing required following any amendments to the EGAT Security Documents to which the Security Agent has consented as contemplated by Clause 4(ii).

4. **EGAT Undertakings and Acknowledgement.**

At any time until the Senior Debt End Date, EGAT shall not:

- (a) exercise any right to collect, and shall not have any right to receive, any payments or proceeds of any kind through the enforcement of any EGAT Security except as permitted under Clause 6; or
  - (b) amend, modify or replace any provision of the EGAT Security Documents without the prior written consent of the Security Agent, except that no such consent will be required if the amendment, modification or replacement does not adversely affect the rights of the Finance Parties under this Agreement or the Financing Documents; or
  - (c) commence or take any steps (other than internal preparatory steps) to commence any Insolvency Proceedings, provided that EGAT shall have the right to participate in Insolvency Proceedings that have not been commenced by EGAT (or in respect of which, EGAT did not take any steps to commence) and to file proof of claim in order to preserve its rights.
5. **Documentation.** At any time until the Senior Debt End Date, each of EGAT and the Security Agent shall execute and deliver such further documents and agreements and take all other actions (including the filing of this Agreement and any amendments to any EGAT Security or Senior Liens at the State Assets Management Department of the Ministry of Finance of the Lao PDR and any other appropriate authorities) reasonably requested by the Security Agent or EGAT to give effect to the provisions of this Agreement. EGAT and the Security Agent shall be reimbursed by the Borrower for all reasonable costs incurred by EGAT or the Security Agent, as the case may be, in connection with its respective compliance with this Clause 5 and, in the case of EGAT, in accordance with Section 9.4.5 of the Power Purchase Agreement.

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**6. Enforcement.**

Until the Senior Debt End Date:

- (i) EGAT shall not commence any judicial action or proceeding to enforce, or exercise any other rights to enforce, any EGAT Security unless:
  - (a) in the case of the mortgages referred to in paragraph (a) of the definition of EGAT Security, the Finance Parties have commenced (and have not withdrawn) judicial action or proceedings, or are exercising any other right, to enforce any Senior Lien;
  - (b) in the case of the assignment of insurances referred to in paragraph (b) of the definition of EGAT Security, EGAT has terminated the Power Purchase Agreement following the occurrence of a Generator Event of Default or a Lao Political Force Majeure; or
  - (c) in the case of any other form of EGAT Security, EGAT has terminated the Power Purchase Agreement in accordance with the terms of the Power Purchase Agreement and the Acknowledgement and Consent executed by EGAT and acknowledged by the Security Agent;
- (ii) if EGAT commences any judicial action or proceeding or exercises any other rights as permitted in accordance with paragraph (i) above, it shall remit all proceeds that it has actually received from such action, proceeding or exercise of rights to the Security Agent, after deducting its costs and expenses incurred in connection with such action, proceeding or exercise of rights, to the extent required to satisfy the Senior Debt Amount which is due and payable prior to the Senior Debt End Date and not paid;
- (iii) if EGAT commences any judicial action or proceeding or exercise any other rights other than as permitted in accordance with paragraph (i) above, it shall remit all proceeds that it has actually received from such action, proceeding or exercise of rights to the Security Agent (without deducting its costs and expenses incurred in connection with such action, proceeding or exercise of rights), to the extent required to satisfy the Senior Debt Amount which is due and payable prior to the Senior Debt End Date and not paid;
- (iv) EGAT shall take, at the cost of the Borrower, all reasonable and prompt action to secure the release of any EGAT Security over the assets secured by the EGAT Security if the Security Agent or any other Finance Party or its agent, trustee or nominee disposes of such assets in enforcing their rights under the Senior Liens (including, without limitation, providing, if requested, any release of the EGAT Security with respect to the Insurances);
- (v) if the Finance Parties or the Security Agent rescinds, withdraws or otherwise ceases any action or proceeding referred to in paragraph (i)(a) above, EGAT shall likewise rescind, withdraw or cease any action or proceeding undertaken by it prior to such rescission, withdrawal or cessation by the Finance Parties or

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the Security Agent and the Borrower shall reimburse EGAT for any costs incurred by it in connection with such action or proceeding or its rescission, withdrawal or cessation; and

- (vi) EGAT shall cooperate reasonably with the Security Agent in connection with the Finance Parties' or the Security Agent's exercise of remedies under the Senior Liens.

On and after the Senior Debt End Date:

- (a) EGAT shall have the right to commence any judicial action or proceeding and to take all other actions considered appropriate by it to enforce the EGAT Security in order to collect the payment of the EGAT Debt Amount and all other related charges without restriction;
- (b) if EGAT commences any judicial action or proceeding or exercises any other rights to enforce any EGAT Security prior to the Final Release Date, EGAT shall remit to the Security Agent a portion of the proceeds that it actually receives from such action, proceeding or exercise of rights, such amount to be calculated on a pro rata basis by reference to the aggregate of the Pari Passu Debt Amount and the EGAT Debt Amount; and
- (c) if the Finance Parties commence any judicial action or proceeding or take any other actions to enforce the Senior Liens prior to the Final Release Date, the Finance Parties shall remit to EGAT a portion of the proceeds that it actually receives from such action, proceeding or exercise of rights, such amount to be calculated on a pro rata basis by reference to the aggregate of the Pari Passu Debt Amount and the EGAT Debt Amount.

7. **Application of Proceeds.**

- (i) At all times until the Senior Debt End Date, the proceeds from: (a) the sale of the Borrower's buildings or machinery; and (b) the Insurances, shall be applied first toward the Senior Debt Amount and then to the EGAT Debt Amount.
- (ii) Each of EGAT and the Security Agent undertakes to sign and to, subject to the terms and conditions of this Agreement, be bound by the notice of security assignment to be issued by each of them in respect of the Insurances, as such notice and acknowledgement (containing the form of endorsement (the **Endorsement**) to be attached to the Insurances) to be substantially as set out in Annex 3.
- (iii) If any payment or distribution (whether in cash, securities or other property and whether by set-off or in any other manner) is paid to, or received or collected by EGAT through the enforcement of the EGAT Security prior to the Senior Debt End Date, EGAT shall hold such payment or distribution on trust for the Finance Parties and promptly remit the same to the Security Agent.

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- (iv) If any payment or distribution (whether in cash, securities or other property and whether by set-off or in any other manner) is paid to, or received or collected by EGAT through the enforcement of the EGAT Security on or after the Senior Debt End Date but prior to the Final Release Date, EGAT shall hold a portion of such payment or distribution on trust for the Finance Parties and promptly remit the same to the Security Agent, such amount to be calculated on a pro rata basis by reference to the aggregate of the Pari Passu Debt Amount and the EGAT Debt Amount.
- (v) If any payment or distribution (whether in cash, securities or other property and whether by set-off or in any other manner) is paid to, or received or collected by the Finance Parties through the enforcement of the Senior Liens on or after the Senior Debt End Date but prior to the Final Release Date, the Finance Parties shall hold a portion of such payment or distribution on trust for EGAT and promptly remit the same to EGAT, such amount to be calculated on a pro rata basis by reference to the aggregate of the Pari Passu Debt Amount and the EGAT Debt Amount.

**8. Term of Agreement and End of Subordination.**

- (a) The terms and conditions set forth in this Agreement shall be effective as between the Security Agent, the Finance Parties and EGAT from the date of this Agreement until the Final Release Date without regard to the inclusion in any Senior Security Document of any statement of the amount of indebtedness or other obligations secured by such Senior Security Document.
- (b) Notwithstanding any other provision of this Agreement to the contrary, on and with effect from the Senior Debt End Date:
  - (i) EGAT shall be entitled to exercise its rights to enforce the EGAT Security in accordance with the terms of the EGAT Security Documents; and
  - (ii) the Finance Parties shall (until the Final Release Date only) be entitled to exercise their respective rights to enforce the Senior Liens in accordance with the terms of the Senior Security Documents,in each case without regard to the terms and conditions set forth in this Agreement.

9. **Further Assurances.** Prior to the Senior Debt End Date, EGAT shall, on the reasonable request of the Security Agent, take all reasonable and prompt action to secure the release of the EGAT Security (including, without limitation, providing, if requested, any release of the EGAT Security with respect to the Insurances) to allow the Finance Parties under any new or additional Financing Documents under which any portion of the Senior Debt Amount has been incurred to obtain the benefit of the Senior Liens, provided that the Borrower shall promptly reregister the EGAT Security Documents after any necessary reregistration of the Senior Security Documents has

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been completed. EGAT shall be reimbursed by the Borrower for all reasonable costs incurred by EGAT in connection with complying with this Clause 9.

10. **Subordination in an Insolvency Proceeding.** At all times prior to the Senior Debt End Date, the subordination in this Agreement shall be a continuing subordination and shall benefit the ultimate balance of the Senior Debt Amount, and the rights and obligations of EGAT and the Finance Parties under this Agreement shall remain in full force and effect without regard to, and shall not be impaired or affected by any act, omission or thing (other than any amendment to this Agreement agreed by the parties in accordance with Clause 18) which, but for this provision, would reduce, release or prejudice any of EGAT's or the Finance Parties' rights or obligations under this Agreement.
11. **Subordination Absolute.** At all times prior to the Senior Debt End Date, the subordination in this Agreement shall be a continuing subordination and shall benefit the ultimate balance of the Senior Debt Amount, and the rights and obligations of EGAT and the Finance Parties under this Agreement shall remain in full force and effect without regard to, and shall not be impaired or affected by any act, omission or thing (other than any amendment to this Agreement agreed by the parties in accordance with Clause 18) which, but for this provision, would reduce, release or prejudice any of EGAT's or the Finance Parties' rights or obligations under this Agreement.
12. **Reinstatement.** Prior to the Senior Debt End Date, the rights and obligations of EGAT under this Agreement shall continue to be effective, or be reinstated, as the case may be, if at any time any payment of the Senior Debt Amount in favour of any Finance Party is rescinded or must otherwise be restored or returned by such Finance Party upon the occurrence of any Insolvency Proceeding, or upon or as a result of the appointment of a receiver, intervener or conservator of, or trustee or similar officer for, the Borrower or any substantial part of its property, or otherwise, all as though such payment had not been made.
13. **Subrogation.** EGAT hereby waives all rights of subrogation and all rights of reimbursement or indemnity whatsoever and all rights of recourse to any security for any claim of any Finance Party until the Final Release Date. Following the Final Release Date, the Finance Parties shall, if requested by EGAT and subject to any restrictions on assignment by which the Finance Parties are bound, whether by contract or by law, promptly execute, at the expense of the Borrower, an assignment and such other documents in such form as EGAT may reasonably request to transfer any applicable rights of the Finance Parties against the Borrower relating to the Senior Debt Amount, provided that the assignment and other documents will not impose any ongoing obligations or liabilities on the Finance Parties in relation to the assignment and there will be no liability of the Finance Parties as to the title, value or nature of the rights transferred.
14. **Successors and Assigns.** Prior to the Subordination End Date,
  - (a) this Agreement shall be binding upon and inure to the benefit of and be enforceable by the respective successors and assigns of the Borrower, the Finance Parties, the Security Agent and EGAT; and

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- (b) EGAT shall not assign, novate, transfer or encumber all or any of its rights or obligations (in whole or in part) under this Agreement without the prior written consent of the Security Agent except in circumstances where an assignment, novation, transfer or encumbrance of the Power Purchase Agreement is expressly permitted in accordance with its terms.
15. **No Waivers.** No failure to exercise, and no delay in exercising any right, power or privilege under this Agreement shall operate as a waiver of such right, power or privilege; nor shall any single or partial exercise of any right, power or privilege under this Agreement preclude any other or further exercise of such right, power or privilege or the exercise of any other right, power or privilege. The rights and remedies provided in this Agreement are cumulative and shall not be exclusive of any rights or remedies provided under any other agreement or by law.
16. **Cooperation of Finance Parties.**
- (a) The Security Agent shall promptly inform EGAT:
- (i) of the commencement of any Insolvency Proceeding by or on behalf of the Finance Parties and of any judicial action or proceeding to enforce remedies under the Financing Documents, including, without limitation, the enforcement of the Senior Liens by or on behalf of the Finance Parties. Any failure by the Security Agent to so inform EGAT (other than such failure which does impair or otherwise limits EGAT's right to participate in Insolvency Proceedings as contemplated by Clause 4 or to commence any judicial action or proceeding to enforce remedies as contemplated by Clause 6) will not affect the other provisions of this Agreement;
- (ii) if the Senior Debt Amount is unconditionally satisfied in full prior to [ ], the date that the Senior Debt Amount is unconditionally satisfied in full; and
- (iii) the date on which the Pari Passu Debt Amount is unconditionally satisfied in full.
- (b) The Security Agent shall, following the Senior Debt End Date, at the reasonable request of EGAT and at the cost of the Borrower, take all such reasonable and prompt action, if any, as may be necessary to amend the Senior Liens to ensure that the Senior Liens shall rank pari passu with the EGAT Security.
- (c) On or prior to the Senior Debt End Date, the Security Agent and EGAT shall jointly instruct the Insurers to amend paragraph 3 of the Endorsement such that on and with effect from the Senior Debt End Date (but before the Final Release Date), the Insurer(s) shall pay insurance proceeds in accordance with the joint instructions of the Security Agent and EGAT, such joint instruction to also

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specify the account to which the Insurers are to pay all claims, returned premiums and any other moneys payable to any insured party other than those referred to in paragraph 3(a) of the Endorsement.

- (d) The Senior Liens shall be released as soon as practicable after the Final Release Date in accordance with the relevant provisions of the Senior Security Documents.

17. **Security Agent and Finance Parties.**

- (a) The Security Agent is a party to this Agreement as agent and trustee for the Finance Parties and the exercise by the Security Agent of any right or discretion under this Agreement shall be done on behalf of and in accordance with the instructions of the relevant majority of the Finance Parties as set out in the Financing Documents. EGAT shall have the right to rely on any actions taken by the Security Agent under this Agreement as being taken pursuant to the preceding sentence and any such actions shall be binding on the Finance Parties.
- (b) This Agreement binds the Finance Parties from time to time.
- (c) The Security Agent shall, at the request of EGAT, confirm to EGAT that it has been notified that any exercise of any right or discretion has been authorised as described in Clause 17(a).

18. **Amendments.** This Agreement may not be rescinded, cancelled, modified, changed or waived without the prior written consent of EGAT and the Security Agent.

19. **English Language.** This Agreement is made in the English language. Any translation of this Agreement not approved by the Security Agent and EGAT in writing shall have no legal validity.

20. **Interpretation.** The section headings in this Agreement are for the convenience of reference only and shall not affect the meaning or construction of any provision of this Agreement.

21. **Partial Invalidity.** In case any provision in or obligation under this Agreement shall be invalid, illegal or unenforceable in any jurisdiction, the validity, legality and enforceability of the remaining provisions or obligations, or of such provision or obligation in any other jurisdiction, shall not in any way be affected or impaired thereby.

22. **No Security.** This Agreement is not intended to create or constitute the grant of security by any party to any of the other parties to this Agreement.

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23. **Notices.** All notices and other communications provided for under this Agreement shall be made in the English language and in writing (including telecopier), and shall be telecopied or sent by overnight courier (if for inland delivery) or international courier (if for overseas delivery) to a party to this Agreement at its address and contact number specified below, or at such other address and contact number as is designated by such party in a written notice to the other parties to this Agreement. All such notices and communications shall be effective when received.

**If to EGAT:**

Electricity Generating Authority of Thailand  
53 Charansanitwong Road  
Bang Kruai  
Nonthaburi 11130  
Thailand

Attention: GOVERNOR  
Telephone: (662) 424-2894  
(662) 424-8015  
Facsimile: (662) 433-4896  
(662) 433-1389

**If to the Borrower:**

[  
[,  
[,  
[,  
[

Facsimile: [

Attention: Chief Executive Officer

**If to the Security Agent:**

[ ]

Telephone: [ ]  
Facsimile: [ ]  
Attention: [ ]

24. **Governing Law.** This Agreement shall take effect and be governed by and construed in accordance with the laws of Thailand.

25. **Dispute Resolution.**

- (i) Any dispute arising out of or in connection with this Agreement (including a dispute regarding the existence, validity or termination of this Agreement or

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the consequence of its nullity) (a **Dispute**) shall be referred to and finally resolved by arbitration under the arbitration rules issued by the Arbitration Institute, Office of the Judiciary of Thailand (the “**Arbitration Rules**”) as in force upon the commencement of such arbitration.

- (ii) The arbitral tribunal (the **Tribunal**) shall consist of three arbitrators, one to be appointed by the Security Agent for and on behalf of the Finance Parties, one to be appointed by EGAT. The two arbitrators thus appointed shall choose the third arbitrator who will act as the presiding arbitrator of the Tribunal. The seat of arbitration shall be Bangkok and the language of the arbitration shall be Thai. If one or more arbitrator or arbitrators has not been appointed within 28 days of the dispute being referred to arbitration, then such arbitrator or arbitrators shall be appointed in accordance with the Arbitration Rules or as otherwise agreed in writing by the parties.
26. **Waiver of Immunity.** EGAT hereby agrees not to claim and waives any immunity from any legal action, suit or proceeding, jurisdiction of any court judgment, order, award, execution, set-off or other enforcement process which EGAT is or may be able to claim for itself or its property, assets or revenues (whether by reason of sovereignty or otherwise) in respect of its obligations under this Agreement to the extent permitted by the laws of Thailand.
27. **Confidentiality.** Except as otherwise required by applicable law or regulation, the terms of this Agreement shall be held by the parties to this Agreement in strict confidence and shall not be disclosed to any other person, other than to legal counsel or for the purpose of legal or arbitral proceedings, the Finance Parties, any governmental, banking, taxation or regulatory authority requiring such disclosure by the parties to this Agreement or by a Finance Party and other representatives or advisers of the parties to this Agreement who need to know such information.
28. **Rights of the Borrower.** The Borrower agrees with the other parties to this Agreement that it has no rights whatsoever under this Agreement (including, for the avoidance of doubt, the right to enforce any provisions of this Agreement).
29. **No Amendments to the Power Purchase Agreement.** Each party to this Agreement expressly acknowledges and agrees that no provision of this Agreement is intended nor shall it be deemed to amend or modify in any way whatsoever the provisions of the Power Purchase Agreement.

This Agreement has been entered into as a deed on the date stated at the beginning of this Agreement.

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**EGAT**

EXECUTED as a deed under seal  
 by **ELECTRICITY GENERATING** )  
**AUTHORITY OF THAILAND,** )  
 and signed and delivered as a deed on )  
 its behalf by , in the )  
 presence of: )

Witness's Signature: .....

Name: .....

Address: .....

.....  
 .....

**Borrower**

EXECUTED as a deed by  
 [], )  
 )  
 and signed and delivered as a deed on )  
 its behalf by )  
 Acting under the authority of that )  
 company, in the presence of: )

Witness's Signature: .....

Name: .....

Address: .....

.....  
 .....

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**Annex 1**

**Facility Agreements**

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**Annex 2**

**Insurances**

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**Annex 3****Form of Notice of Assigned Insurances****(including form of endorsements)****PART 1****NOTICE TO INSURER(S)**From: [ ] (the **Company**)[*Security Agent*] (the **Security Agent**)

and

Electricity Generating Authority of Thailand (**EGAT**)To: [*Insurer*] (the **Insurer**)

[ ], [20 ]

Dear Sirs,

**[*Details of Policies*] (each a Policy and together the Policies)**

This letter constitutes notice to you that:

- (a) under the Security Agreement dated [ ], [20 ] (the **Lender Security Agreement**) between the Company and the Security Agent, the Company has, amongst other things, assigned to the Security Agent all of the Company's rights, title and interests, present and future, in each Policy and all sums payable or which may become payable under each Policy or in relation thereto from time to time and the debts represented thereby and including the full benefit of all rights, remedies, rights to make claims, proceeds of claims, awards or judgments, returns of premiums under or in respect of each Policy (the **Security Assets**); and
- (b) under a second ranking assignment of insurances dated [ ], [20 ] (the **EGAT Security Agreement**) between EGAT and the Company, the Company has (subject to the first ranking security provided to the Finance Parties pursuant to the Lender Security Agreement) assigned the Security Assets to EGAT.

Unless otherwise defined in this notice (either directly or by cross-reference to another document), capitalised terms used in this notice shall have the meanings given to them in the Common Terms Agreement (as defined in the Lenders Security Agreement).

References to a **Policy** include any amendment, renewal or replacement of that Policy.

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

EGAT's rights to the Security Assets under the EGAT Security Agreement are subordinated to the rights of the Finance Parties to the Security Assets under the Lender Security Agreement, subject to and pursuant to a subordination agreement dated [ ], [20 ] between the Company, EGAT and the Security Agent (the **EGAT Subordination Agreement**).

The Company has contracted with the Security Agent that each Policy shall at all times until the Final Release Date (as defined in the EGAT Subordination Agreement) contain (amongst other endorsements) the endorsements set out in the Appendix to this notice (the **Endorsements**). EGAT hereby agrees to the terms of each Endorsement.

Each of the Company, the Security Agent and EGAT hereby irrevocably instruct and authorise you to:

- (a) disclose to the Security Agent (until the Final Release Date only) and EGAT any information relating to any Policy or any claim under it; and
- (b) comply with the terms of each Endorsement,

without:

- (i) any reference to or further authority from the Company, the Security Agent or EGAT;
- (ii) any inquiry by you as to the justification for or validity of such instructions; or
- (iii) any prior release of security or any other action from EGAT.

In addition you should note that:

- (1) the Company confirms that it will remain liable for all obligations for which it is expressed to be liable under the Security Assets and neither the Security Agent nor EGAT or any of each such party's agents, any receiver or any other person has any liability in respect of the Security Assets;
- (2) all notices issued by you under any Policy must be copied to the Security Agent (until the Final Release Date only) and EGAT, to the following addresses, or to any other address notified to you by the Security Agent or EGAT from time to time for this purpose:

the **Security Agent**

[ ]

**EGAT**

Electricity Generating Authority of Thailand  
53 Charansanitwong Road  
Bang Krui

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

Nonthaburi 11130

Thailand

Attention: GOVERNOR

Telephone: (662) 424-2894

(662) 424-8015

Facsimile: (662) 433-4896

(662) 433-1389;

(3) the Company has:

(a) on the terms set out in the Lender Security Agreement; and

(b) on the terms set out in the EGAT Security Agreement,

unconditionally and irrevocably appointed an attorney to be the Company's attorney to do (amongst other things) all things which the Company could do in relation to the Security Assets. You are instructed:

(A) until the Senior Debt End Date (as defined in the EGAT Subordination Agreement), to follow instructions given to you by the attorney appointed under the Lender Security Agreement in the event of any conflicting instructions given to you by any other party (including EGAT and the Company);

(B) on and with effect from the Senior Debt End Date until the Final Release Date, to follow instructions given to you jointly by the attorney appointed under the Lender Security Agreement and the attorney appointed under the EGAT Security Agreement in the event of any conflicting instructions given to you by any other party (including the Company); and

(C) after the Final Release Date, to follow instructions given to you by the attorney appointed under the EGAT Security Agreement;

(4) the Company has agreed that it will not amend or waive any provision of or terminate the Policy without the prior consent of:

(A) until the Senior Debt End Date, the Security Agent and, where such amendment, waiver or termination would have the effect of reducing the scope of the relevant insurance or altering or modifying the endorsements thereof, EGAT;

(B) on and with effect from the Senior Debt End Date until the Final Release Date, the Security Agent and EGAT; and

(C) after the Final Release Date, EGAT; and

(5) this notice may not be terminated, amended or varied without the prior written consent of EGAT and, until the Final Release Date, the Security Agent.

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

This letter is governed by the laws of Thailand.

Please confirm your agreement to the above by sending the attached acknowledgement to the Security Agent with a copy to ourselves and EGAT.

Yours faithfully,

\_\_\_\_\_  
For and on behalf of

[]

\_\_\_\_\_  
For and on behalf of

**Electricity Generating Authority of Thailand**

\_\_\_\_\_  
For and on behalf of

**[Security Agent]**

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**APPENDIX****Endorsements**

1. The Insurer(s) acknowledge that they have been notified that the Company has assigned by way of first ranking security to the Finance Parties all its rights, title and interest in this insurance and in the subject matter of this insurance, and confirm that, other than the notification under the Security referred to in paragraph 2 below, they have not been notified of any other assignment of a security interest in the Company's interest in this insurance.
2. The Insurer(s) further acknowledge that they have been notified that the Company has assigned by way of second ranking security to EGAT all its rights, title and interest in this insurance and in the subject matter of this insurance, and confirm that, other than the notification under the security referred to in paragraph 1 above, they have not been notified of any other assignment of a security interest in the Company's interest in this insurance.

The Insurer(s) acknowledge that the security granted by the Company in favour of EGAT referred to in this paragraph 2 is, until the Senior Debt End Date, subordinated to that in favour of the Finance Parties referred to in paragraph 1 above and that, as such, until the Senior Debt End Date, the Insurer(s) agree to pay insurance proceeds in accordance with the instructions of the Security Agent without any requirement for a release of security or any other action on the part of EGAT. On and with effect from the Senior Debt End Date (but before the Final Release Date), the Insurer(s) agree to pay insurance proceeds in accordance with the joint instructions of EGAT and the Security Agent. After the Final Release Date, the Insurer(s) agree to pay insurance proceeds only in accordance with the written instructions of EGAT. All payment of the insurance proceeds shall be made in accordance with paragraph 3 below.

3. For the benefit of the Finance Parties (until the Final Release Date) and EGAT, the insured parties (other than the Finance Parties) irrevocably authorise and instruct the Insurer(s) to pay, and the Insurer(s) agree to pay, all claims, returned premiums and any other moneys payable to any of them, under or in relation to this contract (**Insurance Proceeds**) as follows:

- (a) [if the sum recoverable is in respect of third party claims to be paid directly to a third party under the relevant Insurance, such sums shall be paid directly to that third party]<sup>5</sup>;
- (b) to the extent that sub-paragraph (a) above does not apply or payments have not been made to the third party or named insured (as the case may be) as contemplated therein, to the following bank accounts of the Company:

Bank name: [            ]  
 For account: [            ]  
 For further credit to: [            ]

<sup>5</sup> Insert only for insurances in respect of third party liability.

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

Reference: [ ]

PROVIDED THAT:

- (A) if the Security Agent has notified the Insurer(s) prior to the Senior Debt End Date that the security constituted by the assignment described in paragraph 1 hereof has become enforceable, all such Insurance Proceeds (other than those referred to in paragraph (a) above, which shall be paid in accordance with that paragraph) shall be paid to such other account as the Security Agent may specify;
- (B) if EGAT and the Security Agent have jointly notified the Insurer(s) during the period from the Senior Debt End Date until the Final Release Date that the security constituted by the assignment described in paragraphs 1 and 2 hereof has become enforceable, all such Insurance Proceeds (other than those referred to in paragraph (a) above, which shall be paid in accordance with that paragraph) shall be paid to such account as EGAT and the Security Agent may jointly specify;
- (C) if EGAT has notified the Insurer(s) during the period from the Final Release Date that the security constituted by the assignment described in paragraph 2 hereof has become enforceable, all such Insurance Proceeds (other than those referred to in paragraph (a) above, which shall be paid in accordance with that paragraph) shall be paid to such account as EGAT may specify.

Until the Senior Debt End Date, no other instruction, whether by the Company, EGAT or by any person other than the Security Agent, to make any payment to any other person or account shall be honoured by the Insurer(s) unless given or countersigned by the Security Agent, or such other person as the Security Agent may notify to the Insurer(s) in writing. On and with effect from the Senior Debt End Date until the Final Release Date, no other instruction, whether by the Company or by any person other than EGAT and the Security Agent, to make any payment to any other person or account shall be honoured by the Insurer(s) unless given or countersigned jointly by the Security Agent and EGAT, or such other person as the Security Agent and EGAT may jointly notify to the Insurer(s) in writing. On and with effect from the Final Release Date, no other instruction, whether by the Company or by any person other than EGAT, to make any payment to any other person or account shall be honoured by the Insurer(s) unless given or countersigned by EGAT, or such other person as EGAT may notify to the Insurer(s) in writing. All such payments shall be made by the Insurer(s) without any deduction or set-off on any account or of any kind. Any monies received by the Insurer(s) from any facultative reinsurers of the risks insured under this policy shall be received and held by the Insurer(s) in trust for the relevant claimant Insured. A payment to the loss payee in accordance with this paragraph shall, to the extent of that payment, discharge the liability of the Insurer(s) to pay the Company or other claimant insured party (including EGAT but only when such payment to the loss payee is made to the Security Agent during the

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

period prior to the Senior Debt End Date). [Each payment by the Insurer(s) to a third party of a claim against the Company under the Insurance shall be applied directly to discharge fully and finally an insured liability of the Company to that third party]<sup>6</sup>. The arrangements in this clause shall continue to apply notwithstanding the liquidation or insolvency of the Company or the Insurer(s).

Without prejudice to the generality of the foregoing, notwithstanding any security over the relevant insurance policy or Insurance Proceeds which may exist in favour of EGAT, until the Senior Debt End Date, no countersignature shall be required to be given by EGAT before a payment is made by the Insurer(s) in accordance with this loss payee clause.

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<sup>6</sup> Insert only for insurances in respect of third party liability.



## PART 2

## ACKNOWLEDGEMENT FROM INSURER(S)

To: (1) [*Security Agent*] as Security Agent (the **Security Agent**)

(2) [] (the **Company**)

and

(3) Electricity Generating Authority of Thailand (**EGAT**)

[ ], [ ]

Dear Sirs,

**[Details of Policies] (the Policies)**

We confirm receipt from the Company, the Security Agent and EGAT of a notice dated [ ], [ ] (the **Notice**) of:

- (a) a first ranking security assignment in favour of the Security Agent on the terms of a Security Agreement dated [ ], [ ] (the **Lender Security Agreement**); and
- (b) a security assignment in favour of EGAT on the terms of a second ranking assignment of insurances (the **EGAT Security Agreement**),

in each case in respect of the Company's rights in respect of each of the Policies (the **Security Assets**). We have noted the instructions in the Notice.

Unless otherwise defined in this Acknowledgement, capitalised terms used in this Acknowledgement have the meanings given to them in the subordination agreement dated [ ], [20 ] between the Company, EGAT and the Security Agent (the **EGAT Subordination Agreement**).

We consent to the assignment of the Security Assets under the Lender Security Agreement and under the EGAT Security Agreement.

We confirm that:

- (a) as at the date of this acknowledgment, we have not received notice of the interest of any third party in any Policy;
- (b) we will pay all sums due and give notices under the Policy:
  - (A) until the Senior Debt End Date, as directed in the Notice and the form of endorsement appended to it without seeking any prior release of security or any other action from EGAT;

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

- (B) on and with effect from the Senior Debt End Date until the Final Release Date, as directed in the Notice and the form of endorsement appended to it but subject to the joint written instructions of the Security Agent and EGAT; and
- (C) on and after the Final Release Date, in accordance with the written instructions of EGAT;
- (c) we will follow all other instructions under the Notice;
- (d) we regard the Company as liable to perform all its obligations assumed under the Policy and that neither the Security Agent nor EGAT is under any obligation of any kind whatsoever under the Policy nor under any liability whatsoever in the event of any failure by the Company to perform its obligations under the Policy;
- (e) as at the date of this acknowledgment, each Policy is in full force and effect;
- (f) as at the date of this acknowledgment, we are not aware of any default under any Policy;
- (g) provided that all premiums due to us in respect of the Policies have been received in full, we will not exercise any right of set-off or counterclaim or deduction of any kind for any reason against any amounts payable under the Policies; and
- (h) we will give no less than sixty (60) days prior written notice of our intention to make any amendment, waiver or release of any of our rights, benefits and interests under the Policy to:
- (A) until the Senior Debt End Date, the Security Agent and, where such amendment, waiver or termination would have the effect of reducing the scope of the relevant insurance or altering or modifying the endorsements thereof, EGAT;
- (B) on and with effect from the Senior Debt End Date until the Final Release Date, the Security Agent and EGAT; and
- (C) on and after the Final Release Date, EGAT; and
- (i) although we retain the right to terminate the Policy following non-payment of premia due and payable under the Policy, we will give not less than ten (10) days written notice to the Security Agent (until the Final Release Date only) and EGAT of our intention to do so before terminating the Policy for such non-payment.

This acknowledgment is governed by the laws of Thailand.

Yours faithfully,

\_\_\_\_\_  
For and on behalf of  
[Insurer(s)]

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**Part IV: GOL Consent**  
**(For the purposes of Section 2.1.2(f) of the Agreement)**

**Lao National Committee for Energy**  
 Bureau of the Secretariat  
 HPO Building, Ministry of Industry & Handicrafts  
 Nong Bone Road  
 Vientiane, the Lao PDR.  
 Phone: (856-21) 45 2539-41  
 Facsimile: (856-21) 45 5626

[ ]  
 Chief Executive Officer  
 [ ]  
 [ ]

[ ]  
 Governor  
 Electricity Generating Authority of Thailand  
 53 Charansanitwong Road  
 Bang Kruai, Nonthaburi 11130  
 Thailand

Dear Sirs,

**Xayaburi Hydroelectric Power Project**  
**Concession Agreement**  
**Conditions Subsequent – Relevant Project Documents**

We refer to Clause 5(f)(i) of the GOL Undertaking and the request from [ ] (“Generator”) of [ ] for the GOL to provide written consent to the execution and the delivery of certain documents required to be executed and delivered by Generator, EGAT and the Lenders under the Power Purchase Agreement dated [ ] (the “PPA”) entered into between Generator and EGAT.

We hereby give the GOL’s consent to the execution and the delivery of each of the Mortgage Contract (as the Additional Security under the PPA) and the Insurance Assignment between EGAT and Generator (the “EGAT Security Documents”) and the Subordination Agreement between the Lenders, EGAT and Generator, each such document having been executed and delivered in accordance with Sections 2.1.2(b) 2.1.2(c) and 9.4.4 of PPA, respectively.

We further confirm that, in accordance with and pursuant to the terms of the Concession Agreement, the EGAT Security Documents and the Subordination Agreement are not required to be translated into Lao language nor notarised in order to be enforceable in the Lao PDR.

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Form of Additional Security, Insurance Assignment and Subordination Principles Schedule 25

We further confirm that no further approval by the GOL is required for any amendment to the EGAT Security Documents and the Subordination Agreement resulting from another Person succeeding Electricity Generating Authority of Thailand as a party to the Power Purchase Agreement dated [ ] (the "PPA") in accordance with Section 17.4.3(b) of the PPA arising out of or in connection with: (i) the establishment, organization and operation or any other aspects of the Power Pool in Thailand; or (ii) the reorganisation, restructuring, corporatization, privatization or reincorporation of EGAT or any other governmental organizations associated with the electricity generation, transmission, supply and distribution industry in Thailand.

We further confirm that we have caused the EGAT Security Documents and the Subordination Agreement to be registered with the relevant Lao Governmental Authorities for the benefit of Electricity Generating Authority of Thailand and will cause the EGAT Security Documents and the Subordination Agreement to be registered with the relevant Lao Governmental Authorities for the benefit of the permitted successor, assignee or transferee of Electricity Generating Authority of Thailand under the Power Purchase Agreement in the event that either: (i) the establishment, organization and operation or any other aspects of the Power Pool in Thailand; or (ii) the reorganization, restructuring, privatization and/or reincorporation of Electricity Generating Authority of Thailand or any other governmental organizations associated with the electricity generation, transmission, supply and distribution industry in Thailand, results in another Person succeeding Electricity Generating Authority of Thailand as a party to the PPA in accordance with Section 17.4.3(b) of the PPA.

Yours sincerely,

[ ]

Bureau Chief, Bureau of the Secretariat, LNCE

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Schedule 26NOTICE TO EGAT OF ASSIGNMENT OF PPA

Date: [Specify]

To: Electricity Generating Authority of Thailand

Re: The Power Purchase Agreement between Electricity Generating Authority of Thailand and [], dated [ ].

Dear Sirs:

We refer to the power purchase agreement relating to the Xayaburi Hydroelectric Power Project in the Lao PDR between Electricity Generating Authority of Thailand (“**EGAT**”) and [] (the “**Company**”), dated [ ] (the “**Agreement**”). Unless otherwise defined in this notice (the “**Notice of Assignment**”), the defined terms used herein shall have the same meaning as set forth in the Agreement and references herein to Sections are to Sections of the Agreement.

We hereby give EGAT notice that:

1. Pursuant to the assignment of the Agreement between the Company and [specify] (the “**Security Agent**”) as agent and trustee for and on behalf of the Lenders dated [specify], a copy of which is attached hereto (the “**Assignment**”), the Company has assigned to the Security Agent as agent and trustee for and on behalf of the Lenders, effective as of the date of the Assignment, all of the Company’s rights, title, interest and benefit under, in and to the Agreement by way of security for the Company’s obligations under the Financing Documents.
2. Until such time as the Company is replaced as the counter Party to EGAT under the Agreement by another Person (the “**Substituted Party**”) in accordance with Section 17.4.4 as contemplated by paragraph 3 of this Notice of Assignment and paragraph 8 of the acknowledgement and consent the form of which is set out in Annex I of this Notice of Assignment (the “**Acknowledgement and Consent**”), the rights, title and benefit under, in and to the Agreement that have been assigned to the Security Agent under the Assignment are subject to the following:
  - (a) the Security Agent may, upon delivery of written notification thereof to EGAT (with a copy to the Company), directly exercise:
    - (i) all rights of the Company to all payments due and owing to the Company under the Agreement and all rights, title, interest, benefit and remedies of the Company to all monetary claims due and owing to the Company under the Agreement and any proceeds thereof;
    - (ii) all rights of the Company to amend any term of the Agreement or waive any obligation of EGAT pursuant to the Agreement;

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- (iii) all rights of the Company to sell, assign, transfer or otherwise dispose of all or any part of its rights, title, interest and benefit under, in and to the Agreement pursuant to the Agreement regardless of whether such sale, assignment, transfer or disposition is for the purposes of granting or permitting to subsist any security interest over all or any part of the Agreement; and/or
- (iv) in the event that the Lenders have become entitled to exercise their rights under the Financing Documents in that regard, the rights of the Company to terminate the Agreement;

provided, further, that the Company agrees that EGAT is entitled to deal with the Security Agent as regards those rights of the Company as are set forth in this subparagraph (a) as have been identified as being exercised by the Security Agent in the written notification required to be delivered to EGAT by the Security Agent hereunder;

- (b) other than as set forth in subparagraph (a) of this Paragraph 2, all rights, title, interest and benefit under, in and to the Agreement assigned to the Security Agent pursuant to the Assignment shall be exercised solely by the Company;
  - (c) EGAT shall look solely to the Company for satisfaction of all obligations of the counter Party to EGAT under the Agreement;
  - (d) the Company shall remain solely responsible for satisfaction of the contractual obligations of the counter Party to EGAT under the Agreement as well as all liabilities incurred by it in its capacity as the counter Party to EGAT (including any sums then due and owing to EGAT) under the Agreement; and
  - (e) with regard to the latitude and manner in which all rights, title, interest and benefit under, in and to the Agreement assigned to the Security Agent pursuant to the Assignment may be exercised by the Security Agent, the Security Agent and its exercise of such assigned rights are exempted from the restrictions set forth in Section 17.12.1(b) to the extent that such assigned rights are being exercised by the Security Agent on behalf of the Lenders or by the Lenders pursuant to the security interests extended to the Lenders in the Financing Documents.
3. Subject to the following requirements, pursuant to the Assignment and subject to satisfaction of the requirements in Section 17.4.4, the Security Agent may substitute: (a) itself, any Lender or any of their Affiliates; or (b) any other Person, including, without limitation, the purchaser or other transferee of the rights and obligations of the Company under the Agreement, in place of the Company as the counter Party to EGAT under the Agreement by way of the assignment and novation of rights and obligations thereunder; provided, however, such substitution shall only become effective for purposes of the Agreement upon:

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*[Handwritten signature]*

- (a) the issuance by the Security Agent of a written notice to EGAT as to the intended transfer of the Generator System, all the related assets and/or shares of the Company to the Person proposed to become the Substituted Party using the notification form set out in Annex II to this Notice of Assignment (the “**Transfer Notice**”) and the approval of EGAT to the Substituted Party proposed in the Transfer Notice in accordance with paragraph 8 of the Acknowledgment and Consent;
  - (b) compliance with the requirements set forth in Section 17.4.2;
  - (c) the novation of the rights and obligations of the Company under the Agreement to the Substituted Party becoming fully effective in accordance with the laws of Thailand; and
  - (d) receipt by EGAT of written notification from the Substituted Party of the date of novation of the rights and obligations of the Company to the Substituted Party and the assumption by the Substituted Party of the contractual obligations of the Company as the counter Party to EGAT under the Agreement.
4. The Company and the Security Agent have agreed and hereby give EGAT notice that at such time as the Company is replaced by the Substituted Party as the counter Party to EGAT under the Agreement in accordance with and subject to the prior satisfaction of the requirements set forth in Section 17.4, as contemplated by paragraph 3 hereof and paragraph 8 of the Acknowledgment and Consent, the Substituted Party shall be bound by all the terms and conditions of the Agreement and shall be solely obliged and liable to EGAT to perform all the obligations of the counter Party to EGAT under the Agreement and the Substituted Party shall become solely entitled to exercise all rights and become solely entitled to all benefits under the Agreement identical to those of the Company thereunder and shall assume obligations toward EGAT identical to the obligations owed by the Company to EGAT under the Agreement and the Substituted Party shall thereupon become solely liable for all liabilities related to the performance of such obligations (including all liabilities incurred on the part of the Company to EGAT prior to the novation of the rights and obligations of the Company to the Substituted Party) and the Company shall thereupon cease to be entitled to exercise any such rights and enjoy any such benefits as against EGAT under the Agreement and shall be released from any such obligations owed by the Company to EGAT under the Agreement.
5. The Company and the Security Agent have agreed that, subject to Section 7.3(a), any amounts in Baht or US Dollars due and payable by EGAT pursuant to the Agreement shall be paid in accordance with the Agreement to the accounts whose details are provided to EGAT by the Security Agent prior to the date of the first payment by EGAT pursuant to the Agreement or to such other account as the Security Agent may otherwise specify to EGAT from time to time.

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6. The Company and the Security Agent hereby request EGAT:
- (a) to provide to the Security Agent a copy of any notice of a Generator Event of Default at the same time said notice is provided to Generator; and
  - (b) to sign and return to the Security Agent an acknowledgement and consent substantially in the form of the Acknowledgement and Consent.
7. The Assignment, this Notice of Assignment and any Transfer Notice as may be delivered to EGAT in the future shall be amended, varied, modified, novated or supplemented only in writing signed by all the parties thereto and upon obtaining the prior written consent of EGAT. For the avoidance of doubt, references in this Notice of Assignment to the Assignment shall be construed as references to the Assignment as the same may have been, or may from time to time be amended, varied, modified, novated or supplemented and shall include any document which is supplemental to, is expressed to be collateral with or is entered into pursuant to or in accordance with the terms of the Assignment.
8. This Notice of Assignment shall be governed by and construed in accordance with the laws of Thailand.

Please acknowledge receipt of this Notice of Assignment and confirm EGAT's consent to the terms hereof by signing and returning one copy of the attached form of Acknowledgement and Consent to the Company and one copy to the Security Agent.

□  
as **Company**

By: \_\_\_\_\_  
Name:  
Title:

**[Specify Bank]**  
as **Security Agent**, acting for itself and the Lenders

By: \_\_\_\_\_  
Name:  
Title:

- Attachments: (1) Form of Acknowledgement and Consent of EGAT  
(2) Form of Transfer Notice to EGAT  
(3) Two copies of this Notice of Assignment  
(4) Copy of Assignment

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## ANNEX I

**FORM OF ACKNOWLEDGEMENT AND CONSENT OF  
ELECTRICITY GENERATING AUTHORITY OF THAILAND**

Date [Specify]

To: [Specify Relevant Bank] (the Security Agent)

From: Electricity Generating Authority of Thailand (EGAT)

Re: The Notice of Assignment of the Power Purchase Agreement between Electricity Generating Authority of Thailand (EGAT) and [], dated [ ] [].

Dear Sirs:

With reference to the power purchase agreement relating to the Xayaburi Hydroelectric Power Project in the Lao PDR between Electricity Generating Authority of Thailand (“EGAT”) and [] (the “Company”), dated [specify] (the “Agreement”), EGAT hereby acknowledges receipt of:

- (i) the notice to EGAT of the assignment of the Agreement by the Company to the Security Agent as agent and trustee for and on behalf of the Lenders, dated [specify] (the “Notice of Assignment”); and
- (ii) a copy of the assignment of the Agreement between the Company and the Security Agent as agent and trustee for and on behalf of the Lenders, dated [specify] (the “Assignment”).

EGAT hereby consents to the assignment of the Agreement by the Company to the Security Agent by way of security to the Lenders in accordance with the terms and conditions specified in the Assignment, the Notice of Assignment and this Acknowledgement and Consent, each of such documents as of the respective dates specified above.

1. Unless otherwise defined in this Acknowledgement and Consent, the terms defined in the Notice of Assignment (either directly or by cross-reference to another document) shall have the same meaning when used herein and references herein to Sections are to Sections of the Agreement.
2. EGAT represents and warrants to the Security Agent and each of the Lenders that, as at the date hereof:
  - (a) EGAT is a juristic person duly established pursuant to the Electricity Generating Authority of Thailand Act, B.E. 2511, as amended, and EGAT is validly existing under the laws of Thailand with power to enter into this Acknowledgement and Consent and the Agreement and to perform its obligations thereunder and all corporate, statutory, governmental and other action required to authorize the execution and delivery by EGAT of this

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Acknowledgement and Consent and the Agreement and its performance of such obligations have been duly taken;

- (b) the execution, delivery and performance by EGAT of this Acknowledgement and Consent and the Agreement do not and will not: (i) require any consent, approval, authorization or permit which has not been obtained, (ii) violate any provision of any law, rule, cabinet resolution, regulation, order, writ, judgment, injunction, decree, determination or award which applies to EGAT, (iii) result in a breach of or constitute a default under any agreement relating to management or affairs of EGAT or any loan or other material agreement, lease or instrument to which EGAT is a party or by which EGAT or its properties may be bound or affected, or (iv) result in, or require, the creation or imposition of any mortgage, pledge, lien, security interest or other charge or encumbrance of any nature (other than as contemplated by this Acknowledgement and Consent or the Agreement) upon or with respect to any of the properties EGAT now owns or hereafter acquires; and EGAT is not in violation, breach or default of any provision of any law, rule or regulation, cabinet resolution, order, writ, judgment, injunction, decree, determination or award which applies to it or any agreement, lease or instrument referred to above in clause (iii) of this subsection (b), which violation, breach or default might have a material adverse effect on the ability of EGAT to perform its obligations under this Acknowledgement and Consent and the Agreement;
- (c) this Acknowledgement and Consent and the Agreement are in full force and effect and constitute legal, valid and binding obligations of EGAT enforceable in accordance with their terms;
- (d) there is no pending action or proceeding affecting EGAT before any court, governmental agency or arbitrator which could materially and adversely affect the financial condition or operations of EGAT or the ability of EGAT to perform its obligations under, or which purports to affect the legality, validity or enforceability of this Acknowledgement and Consent or the Agreement;
- (e) to EGAT's knowledge, the Company is not in default under any material covenant or obligation under the Agreement; and
- (f) other than the on-going efforts to commercialize, reorganize, restructure, incorporate and/or privatize EGAT and/or to restructure the electric power generation, transmission and distribution industry within Thailand pursuant to the directives of the relevant Thai Governmental Authorities, EGAT has not taken steps or started legal proceedings and, to the best of its knowledge and belief, no other steps have been taken and no legal proceedings have been started or threatened against it for its winding-up, dissolution or reorganization or for the appointment of a receiver or similar officer of it or all or any of its assets or revenues which could materially and adversely affect the financial condition or operation of EGAT or its ability to perform its obligations under, or which purports to affect the legality, validity or enforceability of, this Acknowledgement and Consent or the Agreement.

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3. EGAT has not received any other notice of assignment of any rights or obligations under the Agreement.
4. Subject to Section 7.3(a), EGAT will directly pay all amounts otherwise due and payable by it to the Company under and in accordance with the Agreement to the relevant bank account specified in paragraph 5 of the Notice of Assignment or such other accounts as the Security Agent may specify to EGAT from time to time.
5. EGAT will provide to the Security Agent a copy of any notice of a Generator Event of Default at the same time said notice is provided to Generator.
6. EGAT hereby confirms that the exercise of the rights, title, interest and benefit under, in and to the Agreement assigned to the Security Agent pursuant to the Assignment are exempted from the restrictions set forth in Section 17.12.1(b) to the extent that such assigned rights are being exercised by the Security Agent on behalf of the Lenders or by the Lenders pursuant to the security interests extended to the Lenders in the Financing Documents.
7. Upon the exercise by the Lenders of their security rights under the Financing Documents, EGAT shall provide to any Person that has been certified by the Security Agent as a candidate for becoming the Substituted Party a sufficient opportunity to conduct its due diligence investigation into the outstanding liabilities of the Company to EGAT in a manner that is consistent with international practices by granting such candidate prompt and reasonable access upon reasonable notice to the personnel and records of EGAT related to all such liabilities and by EGAT exercising reasonable efforts to obtain for such candidate such information regarding such liabilities as is requested and relevant regarding such liabilities.
8.
  - (a) Subject to the satisfaction of the requirements in Section 17.4.4 of the Agreement, EGAT shall consent in writing to the transfer of the rights and obligations of the Company under the Agreement to the Person designated to become a Substituted Party by the Security Agent on behalf of the Lenders in a written notice in the form set out in Annex II to the Notice of Assignment (the “**Transfer Notice**”); provided, however, that any and all such transfers and substitutions shall only become effective upon: (i) receipt by EGAT of the Transfer Notice, (ii) approval by EGAT of the proposed Substituted Party; (iii) satisfaction of the requirements set forth in Section 17.4.2; (iv) full effectiveness of the novation of the rights and obligations of the Company to the Substituted Party in accordance with the laws of Thailand; and (v) receipt by EGAT of written notification from the Company and the Substituted Party that the Substituted Party has assumed its responsibilities as the counter Party to EGAT under the Agreement.
  - (b) With respect to the substitution of the Company by the Person proposed to become the Substituted Party in a Transfer Notice, EGAT agrees to:
    - (i) reasonably consider whether or not the Person proposed to become the Substituted Party satisfies the requirements in Section 17.4.4(a) of the Agreement based upon the information that has been submitted to

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EGAT and such other information as may be reasonably requested by EGAT; and

- (ii) upon consenting to the Substituted Party proposed in the relevant Transfer Notice in accordance with paragraph 8 herein and subject to EGAT being reimbursed by the Company for all reasonable costs and expenses (including legal fees) incurred in the drafting, negotiation and execution of same, execute such documents as may be reasonably requested to effect or record the novation of the rights and obligations of the Company under the Agreement to the Substituted Party.

9. In the event that a Generator Events of Default occurs:

- (a) EGAT shall give prior written notice to the Security Agent of EGAT's intent to terminate the Agreement, suspend its performance of its obligations under the Agreement, enforce any remedies thereunder, take any insolvency action or exercise (except for the case where the Lenders have first exercised their own security interests thereto pursuant to the Financing Documents) its security interest against or in any of the property of the Company on or after:
  - (i) with respect to those Generator Events of Default for which EGAT is entitled to terminate the Agreement pursuant to Section 10.2.2(a) of the Agreement, the date such right to terminate has arisen; or
  - (ii) with respect to Generator Events of Default defined by Sections 10.2.1 (o) and (r) of the Agreement, where the applicable cure period pursuant to Section 10.2.2(b) is either:
    - (aa) shorter than ninety (90) days, the date on which written notice of the Generator Event of Default was given to the Company by EGAT under Section 10.2.2(b); or
    - (bb) ninety (90) days or longer, the date which is ninety (90) days before the expiration of such cure period, and
- (b) notwithstanding Section 10.2 of the Agreement but subject to the condition that in all cases during the ninety (90) day period after EGAT has given such prior written notice to the Security Agent of EGAT's intent to terminate the Agreement, suspend its performance of its obligations under the Agreement, enforce any remedies thereunder, take any insolvency action or exercise (except for the case where the Lenders have first exercised their own security interests thereto pursuant to the Financing Documents) its security interest against or in any of the property of the Company as referred to in paragraph 9(a) above either:
  - (i) a remedy of the default is being diligently pursued; or
  - (ii) the Security Agent is conducting bona fide negotiations to acquire or dispose of the Company's interest in the Agreement and the Project,

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EGAT shall not exercise any right to so terminate, suspend, enforce, take or exercise and EGAT shall continue to perform its obligations under the Agreement within the foregoing ninety (90) day notice periods, provided further that such provision by EGAT of ninety (90) days prior written notice to the Security Agent of EGAT's intent to so terminate, suspend, enforce, take or exercise shall in all cases not constitute or be deemed to be a grant of any additional cure period to the Company other than the cure period that has been provided in the Agreement.

In the event that a Generator Event of Default is remedied during any such ninety (90) day notice period, EGAT will not exercise such right of termination, suspension or enforcement by reason of such Generator Event of Default following such remedy. EGAT confirms that it will not treat any enforcement action against the Company by the Security Agent on behalf of the Lenders during any such ninety (90) day notice period as constituting a default or an Event of Default under the Agreement.

10. (a) Prior to the effectiveness of the novation of the rights and obligations of the Company under the Agreement to the proposed Substituted Party, the proposed Substituted Party shall not be under any obligation of any kind whatsoever under the Agreement nor be under any liability whatsoever in the event of any failure by the Company to perform its obligations under the Agreement.
- (b) Upon such novation taking effect as contemplated by paragraph 3 of the Assignment and paragraph 8 hereof, EGAT agrees that:
- (i) the Substituted Party shall acquire rights as against EGAT under the Agreement and be entitled to all benefits under the Agreement identical to those of the Company thereunder and shall assume obligations toward EGAT identical to the obligations owed by the Company to EGAT under the Agreement (including all liabilities incurred on the part of the Company to EGAT prior to the novation of the rights and obligations of the Company to the Substituted Party); and
- (ii) the Company shall thereupon cease to be entitled to exercise any such rights and enjoy any such benefits as against EGAT under the Agreement and shall be released from any such obligations owed by the Company to EGAT under the Agreement.
11. EGAT agrees not to claim and hereby waives any immunity from any legal action, suit or proceeding, jurisdiction of any court, judgment, order, award, execution, set off or other enforcement process which it is or may be able to claim for itself or its property, assets or revenues (whether by reason of sovereignty or otherwise) in respect of its obligations hereunder or under any assigned agreement, to the extent permitted by the laws of Thailand.

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12. EGAT agrees to abide by all the terms and conditions as specified herein and to act accordingly upon the effectiveness of this Acknowledgement and Consent.
13. This Acknowledgement and Consent shall take effect and be governed by and construed in accordance with the laws of Thailand.

Please acknowledge receipt of this Acknowledgement and Consent and return one of the two original copies of this Acknowledgment and Consent to EGAT.

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For and on behalf of

**ELECTRICITY GENERATING AUTHORITY OF THAILAND**

By: \_\_\_\_\_  
Name:  
Title: Governor

Acknowledged by:

**[Specify Bank]**  
as **Security Agent**, acting for itself and the Lenders

By: \_\_\_\_\_  
Name:  
Title:

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## ANNEX II

**FORM OF TRANSFER NOTICE TO ELECTRICITY GENERATING AUTHORITY OF THAILAND AFTER THE EFFECTIVENESS OF TRANSFER/NOVATION**

Date [Specify]

To: Electricity Generating Authority of Thailand

Re: The Power Purchase Agreement between Electricity Generating Authority of Thailand and [ ], dated [ ] (the “**Agreement**”).

Dear Sirs:

We refer to the assignment of the Agreement made between [ ] (the “**Security Agent**”) as agent and trustee for and on behalf of the Lenders and [ ] (the “**Company**”), dated [specify] (the “**Assignment**”) and the acknowledgement and consent to the Assignment dated [ ] given by EGAT (the “**Acknowledgement and Consent**”).

We hereby give EGAT notice pursuant to Section 17.4.4 of the Agreement that the Lenders have exercised their security under the Financing Documents (including the Assignment).

We hereby give EGAT notice (the “**Transfer Notice**”) that:

- (i) the Lenders hereby propose to have [specify] become the Substituted Party (the proposed “**Substituted Party**”) by having [specify] assume, by way of transfer and novation, all of rights and obligations of the Company under the Agreement and to thereby become the counter Party to EGAT under the Agreement, whereupon the Company shall cease to be entitled to exercise any such rights and benefits against EGAT; and
- (ii) [specify] has agreed, subject to EGAT’s prior written approval of the transfer of the rights and obligations of the Company under the Agreement to [specify] as the Substituted Party in accordance with Section 17.4.4(a) of the Agreement and subject to such transfer and novation taking effect in accordance with the laws of Thailand as contemplated in paragraph 8 of the Acknowledgement and Consent, to be unconditionally bound by all the terms and conditions of the Agreement as applicable to the Company acting in its capacity as the counter Party to EGAT under the Agreement; whereupon [specify] shall be solely obliged and liable to EGAT to perform all the obligations of the counter Party to EGAT under the Agreement and [specify] shall become solely liable for all liabilities related to the performance of such obligations (including all liabilities incurred on the part of the Company to EGAT prior to the novation of the rights and obligations of the Company to the Substituted Party), all as contemplated in paragraph 4 of the Notice of the Assignment.

We hereby attach the following information to demonstrate that [specify] satisfies the requirements regarding legal status and technical and financial capabilities set forth in Section 17.4.4(a) of the Agreement. Based on the attached information, we hereby request

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EGAT to consent to the transfer of all of the rights and obligations of the Company under the Agreement to [specify] as the Substituted Party as contemplated by paragraph 8 of the Acknowledgement and Consent.

This Transfer Notice shall be governed by and construed in accordance with the laws of Thailand.

For and on behalf of the Security Agent  
**[Specify Name of Security Agent]**

By:  
Title:

For and on behalf of the Substituted Party  
**[Specify Name of the Substituted Party]**

By:  
Title:

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Schedule 27FORM OF FINANCIAL SECURITIES**Part I: Form of First Security**

**[from Execution Date to the end of the 15-year period commencing from and including the Commercial Operation Date, as extended pursuant to Force Majeure occurring within such 15-year period]**

To: Electricity Generating Authority of Thailand  
53 Charansanitwong Road  
Bang Kruai  
Nonthaburi 11130  
Thailand  
("EGAT")

Fax Number:

Attention:

[Date]

**BANK GUARANTEE NO. [●] (the "Bank Guarantee")**

The following financial institutions:

1. [●] Bank Public Company Limited, a financial institution incorporated under the laws of Thailand whose registered office is located at [●] ("Commercial Securities Facility Agent");
2. [●], a [ ] incorporated under the laws of [ ] whose registered office is located at [●] ("Guarantor 1"); and
3. [●], a [ ] incorporated under the laws of [ ] acting through its Bangkok branch at [●] ("Guarantor 2");

(Guarantor 1, Guarantor 2 [etc.] are each referred to in this Bank Guarantee as a "Guarantor", and together as the "Guarantors")

hereby establish this Bank Guarantee for the account of [ ] (the "Company") in favor of EGAT as follows:

1. Pursuant to the Power Purchase Agreement (the "PPA") dated [ ] (the "Execution Date") between EGAT and the Company, the Company is required to deposit with EGAT the First Security referred to in Section 9.1(b)(i) of the PPA for the proper and faithful performance of its obligations under the PPA in the aggregate amount of US\$ 19,000,000 (US Dollars Nineteen Million) (the "Available Amount").

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*[Signature]*

2. The Guarantors agree, subject to paragraphs 6 and 11 of this Bank Guarantee and without prejudice to paragraph 9 of this Bank Guarantee, to irrevocably guarantee as primary obligor and not merely as surety, the payment to EGAT of amounts not exceeding the Available Amount in respect of any amount for which EGAT claims that the Company is liable to EGAT under the PPA during the period from the Execution Date until the end of the 15-year period commencing from and including the Commercial Operation Date, such 15-year period being extended pursuant to any Force Majeure occurring within such 15-year period. The Guarantors shall make payment to EGAT in accordance with paragraphs 8 and 11 of this Bank Guarantee upon receipt by the Commercial Securities Facility Agent of a written notice of demand presented on or before the Expiry Date (as defined below) signed by a person duly authorized by EGAT and substantially in the form set out in Annex 1 to this Bank Guarantee (a “**Demand Notice**”) or a Shortfall Notice as defined in paragraph 11, as applicable.
3. The obligations of the Guarantors under this Bank Guarantee are absolute and unconditional, and the Guarantors shall make payment to EGAT without any proof or conditions and without any right of set-off or counterclaim and the Guarantors shall have no right whatsoever to object to any Demand Notice or any Shortfall Notice issued by EGAT in accordance with this Bank Guarantee.
4. The Guarantors expressly agree that EGAT shall not be required to exhaust any right, power or remedy or proceed against the Company under the PPA or any other agreement or instrument referred to in the PPA before being entitled to payment by the Guarantors under this Bank Guarantee.
5. This Bank Guarantee shall be valid and enforceable from the Execution Date until either:
  - (a) in the event that the PPA has not been terminated prior to the end of the 15-year period commencing from and including the Commercial Operation Date (such 15-year period being extended pursuant to any Force Majeure occurring within such 15-year period), the last day of such 15-year period (or if such day is not a Banking Day, the next succeeding Banking Day); or
  - (b) in the event that the PPA has been terminated prior to the end of the 15-year period commencing from and including the Commercial Operation Date (such 15-year period being extended pursuant to any Force Majeure occurring within such 15-year period), the date falling one hundred and eighty (180) days after termination of the PPA as notified jointly by EGAT and the Company to the Commercial Securities Facility Agent in the form set out in Annex 2 to this Bank Guarantee (or if such day is not a Banking Day, the next succeeding Banking Day),

(the “**Expiry Date**”). This Bank Guarantee ceases to be in effect on and from the date immediately following the Expiry Date and without any further action being required to be taken by any person. Notwithstanding the generality of the previous sentence, the Guarantors shall continue to remain liable for any obligations in respect of any

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Demand Notice or any Shortfall Notice delivered by EGAT on or prior to the Expiry Date.

6. The liability of a Guarantor for amounts payable by it under this Bank Guarantee shall not exceed the amount as set forth next to its name under the column “Total Liability Amount” in the table below (the “**Total Liability Amount**”). Without limiting or affecting the liability of each Guarantor to make payment for any amount demanded by EGAT in a Shortfall Notice, the liability of each Guarantor with respect to any amount demanded by EGAT in a Demand Notice (the “**Demanded Amount**”) shall be the relevant Demanded Amount multiplied by the percentage as set forth next to its name under the column “Total Liability Percentage”) in the table below (the “**Total Liability Percentage**”), subject to such liability not exceeding its Total Liability Amount:

<i>Guarantor</i>	<i>Total Liability Percentage</i>	<i>Total Liability Amount</i>
Guarantor 1	●%	[US\$ ●]
Guarantor 2	●%	[US\$ ●]
Guarantor 3	●%	[US\$ ●]

7. Subject to paragraph 11 of this Bank Guarantee:
- each Guarantor’s liability under this Bank Guarantee is several and no Guarantor shall be liable for or responsible for any other Guarantor’s obligations; and
  - the obligations of each Guarantor under this Bank Guarantee are separate and independent obligations and are separately enforceable by EGAT against each Guarantor in accordance with the terms of this Bank Guarantee.
8. Each Guarantor shall honour a Demand Notice delivered to the Commercial Securities Facility Agent in accordance with this Bank Guarantee by paying, in immediately available and freely transferable funds, its Total Liability Percentage of the Demanded Amount, which shall be specified in paragraph 3 of the relevant Demand Notice. All payments to EGAT under this paragraph 8 shall be made to such account of EGAT at such bank in Thailand as is specified in such Demand Notice on the day falling ten (10) Banking Days following the date of receipt of such Demand Notice by the Commercial Securities Facility Agent; provided that if any Demand Notice is delivered by EGAT to the Commercial Securities Facility Agent later than 11:00 a.m. (Bangkok time), then the Guarantors shall not be required to honour such Demand Notice until the day falling eleven (11) Banking Days following the date of receipt of such Demand Notice by the Commercial Securities Facility Agent.
9. Notwithstanding any other provision of this Bank Guarantee, EGAT shall have the right to draw down the full amount available under this Bank Guarantee or any part thereof on or prior to the Expiry Date by issuing a Demand Notice in accordance with the provisions of this Bank Guarantee.

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10. Multiple drawings are permitted under this Bank Guarantee provided that the aggregate amount of all such drawings does not exceed the Available Amount.
11. Notwithstanding any other provision of this Bank Guarantee, if a Guarantor defaults in the payment of all or any portion of the amount required to be paid by it under this Bank Guarantee (any such unpaid amount, the “**Shortfall Amount**”), the non-defaulting Guarantors shall make payment to EGAT in accordance with this paragraph 11 upon receipt by the Commercial Securities Facility Agent of a written notice from EGAT signed by a person duly authorized by EGAT and substantially in the form of Annex 3 to this Bank Guarantee (a “**Shortfall Notice**”). Each non-defaulting Guarantor shall be liable under this paragraph 11 for an amount equal to the lesser of:
- (a) the Total Liability Amount of such non-defaulting Guarantor *minus* the total aggregate amount having been paid by such Guarantor to EGAT under this Bank Guarantee prior to the date of the relevant Shortfall Notice (such amount, the “**Remaining Liability Amount**”); and
  - (b) the relevant Shortfall Amount *multiplied by* the percentage (such percentage, the “**Shortfall Percentage**”) determined by dividing the Total Liability Percentage applicable to such non-defaulting Guarantor by the sum of the Total Liability Percentages for all non-defaulting Guarantors, which shall be specified in the relevant Shortfall Notice.

All payments to EGAT under this paragraph 11 shall be made, in immediately available and freely transferable funds, to such account of EGAT at such bank in Thailand as is specified in such Shortfall Notice on the day falling ten (10) Banking Days following the date of receipt of such Shortfall Notice by the Commercial Securities Facility Agent; provided that if any Shortfall Notice is delivered by EGAT to the Commercial Securities Facility Agent later than 11:00 a.m. (Bangkok time), then the Guarantors shall not be required to honour such Shortfall Notice until the day falling eleven (11) Banking Days following the date of receipt of such Shortfall Notice by the Commercial Securities Facility Agent.

12. For the purpose of this Bank Guarantee, a “**Banking Day**” shall mean a day when banks are open for business in Thailand and New York.
13. This Bank Guarantee is irrevocable, and no Guarantor shall in any event withdraw this Bank Guarantee for any reason during the period for which it is valid and enforceable under paragraph 5 of this Bank Guarantee.
14. This Bank Guarantee is governed by, and shall be construed in accordance with, the laws of Thailand.
15. This Bank Guarantee sets forth the entire undertaking of each Guarantor, and such undertaking shall not in any way be modified, amended, amplified or limited by reference to any document, instrument or agreement referred to in this Bank Guarantee.

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16. Without prejudice to its obligations as a Guarantor under this Bank Guarantee in the event that the Commercial Securities Facility Agent is also one of the Guarantors, the Commercial Securities Facility Agent shall not have any liability or obligation to EGAT as a surety or guarantor as a result of any failure or delay by any Guarantor in performing its respective obligations under this Bank Guarantee.
17. (a) If, at any time in the course of the performance of the PPA, EGAT grants a time extension, or allows the Company to deviate from any terms and conditions of the PPA without the knowledge of any Guarantor, it shall be deemed that such grants shall have been made with the consent of the Guarantors.
- (b) No Guarantor shall be discharged or released from its obligations under this Bank Guarantee by any waiver or forbearance by EGAT under the PPA, whether as to payment, time, performance or otherwise, nor by any variations or amendments to the obligations and responsibilities of the Company under the PPA.
18. Any communication to be made under or in connection with this Bank Guarantee shall be made in writing and, unless otherwise stated, may be made by fax or letter. The address and fax number (and the department or officer, if any, for whose attention the communication is to be made) for any communication or document to be made or delivered under or in connection with this Bank Guarantee shall be identified, with respect to the Commercial Securities Facility Agent and the Guarantors, on the signing page of this Bank Guarantee and, with respect to EGAT, on the first page of this Bank Guarantee. Communications shall be deemed to have been received or delivered:
- (a) in the case of facsimile transmission, at the time of dispatch; or
- (b) in the case of delivery by hand, when actually received; or
- (c) in the case of delivery by post, three (3) days after the day of posting.
- For the avoidance of doubt, any communication delivered by EGAT to the Commercial Securities Facility Agent under this Bank Guarantee shall be deemed to be delivered to each of the Guarantors as if such communication had been delivered to each of them separately.
19. All capitalized terms used in this Bank Guarantee shall, unless otherwise defined in this Bank Guarantee, have the meanings given to them in the PPA.

**IN WITNESS WHEREOF**, the Commercial Securities Facility Agent and the Guarantors have caused this Bank Guarantee to be signed by their authorized representatives and their corporate seal to be hereunto affixed.

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**Commercial Securities Facility Agent:**

[•] BANK PUBLIC COMPANY LIMITED

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

**Guarantor 1:**

[•]

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

**Guarantor 2:**

[•]

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

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Annex 1  
to  
Bank Guarantee No. [●]

### DEMAND NOTICE

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

1. We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this Demand Notice shall, unless otherwise defined in this Demand Notice, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.
2. We hereby make this demand on the Guarantors for payment of the sum of US\$[●] (the “**Demanded Amount**”), such amount being payable to us in accordance with the terms of the Bank Guarantee.
3. In accordance with the terms and conditions of the Bank Guarantee, each Guarantor is required to pay to us the amount set out next to its name under the “Amount Payable by each Guarantor” column in the table below:

<i>Guarantor</i>	<i>Total Liability Percentage</i>	<i>Amount Payable by each Guarantor</i>
Guarantor 1	[●]%	US\$[●]
Guarantor 2	[●]%	US\$[●]
Guarantor 3	[●]%	US\$[●]

4. All amounts payable to us in accordance with this Demand Notice must be paid into the following bank account.

[insert bank account details]

By:  
[insert name]  
[insert title]  
For and on behalf of  
**Electricity Generating Authority of Thailand**

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Annex 2  
to  
Bank Guarantee No. [●]

### TERMINATION CERTIFICATE

(To be issued in the event of termination of the PPA)

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this certificate shall, unless otherwise defined in this Termination Certificate, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.

Pursuant to paragraph 5(b) of the Bank Guarantee, we, the undersigned, hereby jointly certify and confirm to you that:

1. the date of termination of the PPA is [\_\_\_\_\_]; and
2. the Guarantors are hereby authorized to terminate the Bank Guarantee pursuant to paragraph 5(b) thereof with effect from [*insert date permitted under paragraph 5(b) of the Bank Guarantee following termination of the PPA*].

By:  
[insert name]  
[insert title]  
For and on behalf of  
[]  
Date: [●]

By:  
[insert name]  
[insert title]  
For and on behalf of  
**Electricity Generating Authority of Thailand**  
Date: [●]

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Annex 3  
to  
Bank Guarantee No. [●]

### SHORTFALL NOTICE

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

1. We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this Shortfall Notice shall, unless otherwise defined in this Shortfall Notice, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.
2. We hereby notify you that [●] has defaulted in its obligations under the Demand Notice issued by us on [●] in the amount of US\$[●] (the “**Shortfall Amount**”).
3. In accordance with paragraph 11 of the Bank Guarantee, each non-defaulting Guarantor is required to pay to us the lesser of: (a) its Remaining Liability Amount; and (b) the amount set out next to its name under the “Shortfall Amount Payable” column in the table below, as calculated in accordance with paragraph 11(b) of the Bank Guarantee:

<i>Guarantor</i>	<i>Shortfall Percentage</i>	<i>Shortfall Amount Payable</i>
[●]	[●]%	US\$[●]
[●]	[●]%	US\$[●]

4. All amounts payable to us in accordance with this Shortfall Notice must be paid into the following bank account.

[insert bank account details]

By:

[insert name]

[insert title]

For and on behalf of

**Electricity Generating Authority of Thailand**

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**Part II: Form of Second Security**  
**[from Financial Close Date to the end of the Term]**

To: Electricity Generating Authority of Thailand  
 53 Charansanitwong Road  
 Bang Kruai  
 Nonthaburi 11130  
 Thailand  
 (“EGAT”)

Fax Number:

Attention:

[Date]

**BANK GUARANTEE NO. [●] (the “Bank Guarantee”)**

The following financial institutions:

1. [●] Bank Public Company Limited, a financial institution incorporated under the laws of Thailand whose registered office is located at [●] (“**Commercial Securities Facility Agent**”);
2. [●], a [ ] incorporated under the laws of [ ] whose registered office is located at [●] (“**Guarantor 1**”); and
3. [●], a [ ] incorporated under the laws of [ ] acting through its Bangkok branch at [●] (“**Guarantor 2**”);

(Guarantor 1, Guarantor 2 [etc.] are each referred to in this Bank Guarantee as a “**Guarantor**”, and together as the “**Guarantors**”)

hereby establish this Bank Guarantee for the account of SouthEast Asia Energy Limited (the “**Company**”) in favor of EGAT as follows:

1. Pursuant to the Power Purchase Agreement (the “**PPA**”) dated [ ] (the “**Execution Date**”) between EGAT and the Company, the Company is required to deposit with EGAT the Second Security referred to in Section 9.1(b)(ii)(1) of the PPA for the proper and faithful performance of its obligations under the PPA in the aggregate amount of US\$ 15,000,000 (US Dollars Fifteen Million Thousand) (the “**Available Amount**”).
2. The Guarantors agree, subject to paragraphs 6 and 11 of this Bank Guarantee and without prejudice to paragraph 9 of this Bank Guarantee, to irrevocably guarantee as primary obligor and not merely as surety, the payment to EGAT of amounts not exceeding the Available Amount in respect of any amount for which EGAT claims that the Company is liable to EGAT under the PPA during the period from the

Execution Date until the end of the Term. The Guarantors shall make payment to EGAT in accordance with paragraphs 8 and 11 of this Bank Guarantee upon receipt by the Commercial Securities Facility Agent of a written notice of demand presented on or before the Expiry Date (as defined below) signed by a person duly authorized by EGAT and substantially in the form set out in Annex 1 to this Bank Guarantee (a “**Demand Notice**”) or a Shortfall Notice as defined in paragraph 11, as applicable.

3. The obligations of the Guarantors under this Bank Guarantee are absolute and unconditional, and the Guarantors shall make payment to EGAT without any proof or conditions and without any right of set-off or counterclaim and the Guarantors shall have no right whatsoever to object to any Demand Notice or any Shortfall Notice issued by EGAT in accordance with this Bank Guarantee.
4. The Guarantors expressly agree that EGAT shall not be required to exhaust any right, power or remedy or proceed against the Company under the PPA or any other agreement or instrument referred to in the PPA before being entitled to payment by the Guarantors under this Bank Guarantee.
5. This Bank Guarantee shall be valid and enforceable from the date on which this Bank Guarantee is issued until the date falling one hundred and eighty (180) days after termination of the PPA as notified jointly by EGAT and the Company to the Commercial Securities Facility Agent in the form set out in Annex 2 to this Bank Guarantee (or if such day is not a Banking Day, the next succeeding Banking Day), (the “**Expiry Date**”). This Bank Guarantee ceases to be in effect on and from the date immediately following the Expiry Date and without any further action being required to be taken by any person. Notwithstanding the generality of the previous sentence, the Guarantors shall continue to remain liable for any obligations in respect of any Demand Notice or any Shortfall Notice delivered by EGAT on or prior to the Expiry Date.
6. The liability of a Guarantor for amounts payable by it under this Bank Guarantee shall not exceed the amount as set forth next to its name under the column “Total Liability Amount” in the table below (the “**Total Liability Amount**”). Without limiting or affecting the liability of each Guarantor to make payment for any amount demanded by EGAT in a Shortfall Notice, the liability of each Guarantor with respect to any amount demanded by EGAT in a Demand Notice (the “**Demanded Amount**”) shall be the relevant Demanded Amount multiplied by the percentage as set forth next to its name under the column “Total Liability Percentage”) in the table below (the “**Total Liability Percentage**”), subject to such liability not exceeding its Total Liability Amount:

<i>Guarantor</i>	<i>Total Liability Percentage</i>	<i>Total Liability Amount</i>
Guarantor 1	●%	[US\$ ●]
Guarantor 2	●%	[US\$ ●]
Guarantor 3	●%	[US\$ ●]

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7. Subject to paragraph 11 of this Bank Guarantee:
- (a) each Guarantor's liability under this Bank Guarantee is several and no Guarantor shall be liable for or responsible for any other Guarantor's obligations; and
  - (b) the obligations of each Guarantor under this Bank Guarantee are separate and independent obligations and are separately enforceable by EGAT against each Guarantor in accordance with the terms of this Bank Guarantee.
8. Each Guarantor shall honour a Demand Notice delivered to the Commercial Securities Facility Agent in accordance with this Bank Guarantee by paying, in immediately available and freely transferable funds, its Total Liability Percentage of the Demanded Amount, which shall be specified in paragraph 3 of the relevant Demand Notice. All payments to EGAT under this paragraph 8 shall be made to such account of EGAT at such bank in Thailand as is specified in such Demand Notice on the day falling ten (10) Banking Days following the date of receipt of such Demand Notice by the Commercial Securities Facility Agent; provided that if any Demand Notice is delivered by EGAT to the Commercial Securities Facility Agent later than 11:00 a.m. (Bangkok time), then the Guarantors shall not be required to honour such Demand Notice until the day falling eleven (11) Banking Days following the date of receipt of such Demand Notice by the Commercial Securities Facility Agent.
9. Notwithstanding any other provision of this Bank Guarantee, EGAT shall have the right to draw down the full amount available under this Bank Guarantee or any part thereof on or prior to the Expiry Date by issuing a Demand Notice in accordance with the provisions of this Bank Guarantee.
10. Multiple drawings are permitted under this Bank Guarantee provided that the aggregate amount of all such drawings does not exceed the Available Amount.
11. Notwithstanding any other provision of this Bank Guarantee, if a Guarantor defaults in the payment of all or any portion of the amount required to be paid by it under this Bank Guarantee (any such unpaid amount, the "**Shortfall Amount**"), the non-defaulting Guarantors shall make payment to EGAT in accordance with this paragraph 11 upon receipt by the Commercial Securities Facility Agent of a written notice from EGAT signed by a person duly authorized by EGAT and substantially in the form of Annex 3 to this Bank Guarantee (a "**Shortfall Notice**"). Each non-defaulting Guarantor shall be liable under this paragraph 11 for an amount equal to the lesser of:
- (a) the Total Liability Amount of such non-defaulting Guarantor *minus* the total aggregate amount having been paid by such Guarantor to EGAT under this Bank Guarantee prior to the date of the relevant Shortfall Notice (such amount, the "**Remaining Liability Amount**"); and
  - (b) the relevant Shortfall Amount *multiplied* by the percentage (such percentage, the "**Shortfall Percentage**") determined by dividing the Total Liability Percentage applicable to such non-defaulting Guarantor by the sum of the

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Total Liability Percentages for all non-defaulting Guarantors, which shall be specified in the relevant Shortfall Notice.

All payments to EGAT under this paragraph 11 shall be made, in immediately available and freely transferable funds, to such account of EGAT at such bank in Thailand as is specified in such Shortfall Notice on the day falling ten (10) Banking Days following the date of receipt of such Shortfall Notice by the Commercial Securities Facility Agent; provided that if any Shortfall Notice is delivered by EGAT to the Commercial Securities Facility Agent later than 11:00 a.m. (Bangkok time), then the Guarantors shall not be required to honour such Shortfall Notice until the day falling eleven (11) Banking Days following the date of receipt of such Shortfall Notice by the Commercial Securities Facility Agent.

12. For the purpose of this Bank Guarantee, a “**Banking Day**” shall mean a day when banks are open for business in Thailand and New York.
13. This Bank Guarantee is irrevocable, and no Guarantor shall in any event withdraw this Bank Guarantee for any reason during the period for which it is valid and enforceable under paragraph 5 of this Bank Guarantee.
14. This Bank Guarantee is governed by, and shall be construed in accordance with, the laws of Thailand.
15. This Bank Guarantee sets forth the entire undertaking of each Guarantor, and such undertaking shall not in any way be modified, amended, amplified or limited by reference to any document, instrument or agreement referred to in this Bank Guarantee.
16. Without prejudice to its obligations as a Guarantor under this Bank Guarantee in the event that the Commercial Securities Facility Agent is also one of the Guarantors, the Commercial Securities Facility Agent shall not have any liability or obligation to EGAT as a surety or guarantor as a result of any failure or delay by any Guarantor in performing its respective obligations under this Bank Guarantee.
17.
  - (a) If, at any time in the course of the performance of the PPA, EGAT grants a time extension, or allows the Company to deviate from any terms and conditions of the PPA without the knowledge of any Guarantor, it shall be deemed that such grants shall have been made with the consent of the Guarantors.
  - (b) No Guarantor shall be discharged or released from its obligations under this Bank Guarantee by any waiver or forbearance by EGAT under the PPA, whether as to payment, time, performance or otherwise, nor by any variations or amendments to the obligations and responsibilities of the Company under the PPA.
18. Any communication to be made under or in connection with this Bank Guarantee shall be made in writing and, unless otherwise stated, may be made by fax or letter. The address and fax number (and the department or officer, if any, for whose attention

the communication is to be made) for any communication or document to be made or delivered under or in connection with this Bank Guarantee shall be identified, with respect to the Commercial Securities Facility Agent and the Guarantors, on the signing page of this Bank Guarantee and, with respect to EGAT, on the first page of this Bank Guarantee. Communications shall be deemed to have been received or delivered:

- (a) in the case of facsimile transmission, at the time of dispatch; or
- (b) in the case of delivery by hand, when actually received; or
- (c) in the case of delivery by post, three (3) days after the day of posting.

For the avoidance of doubt, any communication delivered by EGAT to the Commercial Securities Facility Agent under this Bank Guarantee shall be deemed to be delivered to each of the Guarantors as if such communication had been delivered to each of them separately.

19. All capitalized terms used in this Bank Guarantee shall, unless otherwise defined in this Bank Guarantee, have the meanings given to them in the PPA.

**IN WITNESS WHEREOF**, the Commercial Securities Facility Agent and the Guarantors have caused this Bank Guarantee to be signed by their authorized representatives and their corporate seal to be hereunto affixed.

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**Commercial Securities Facility Agent:**

[•] BANK PUBLIC COMPANY LIMITED

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

**Guarantor 1:**

[•]

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

**Guarantor 2:**

[•]

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

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Annex 1  
to  
Bank Guarantee No. [●]

### DEMAND NOTICE

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

1. We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this Demand Notice shall, unless otherwise defined in this Demand Notice, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.
2. We hereby make this demand on the Guarantors for payment of the sum of US\$[●] (the “**Demanded Amount**”), such amount being payable to us in accordance with the terms of the Bank Guarantee.
3. In accordance with the terms and conditions of the Bank Guarantee, each Guarantor is required to pay to us the amount set out next to its name under the “Amount Payable by each Guarantor” column in the table below:

<i>Guarantor</i>	<i>Total Liability Percentage</i>	<i>Amount Payable by each Guarantor</i>
Guarantor 1	[●]%	US\$[●]
Guarantor 2	[●]%	US\$[●]
Guarantor 3	[●]%	US\$[●]

4. All amounts payable to us in accordance with this Demand Notice must be paid into the following bank account.

[insert bank account details]

By:  
[insert name]  
[insert title]  
For and on behalf of

Electricity Generating Authority of Thailand

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Annex 2  
to  
Bank Guarantee No. [●]

### TERMINATION CERTIFICATE

(To be issued in the event of termination of the PPA)

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this certificate shall, unless otherwise defined in this Termination Certificate, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.

Pursuant to paragraph 5 of the Bank Guarantee, we, the undersigned, hereby jointly certify and confirm to you that:

1. the date of termination of the PPA is [\_\_\_\_\_]; and
2. the Guarantors are hereby authorized to terminate the Bank Guarantee pursuant to paragraph 5 thereof with effect from [*insert date permitted under paragraph 5(b) of the Bank Guarantee following termination of the PPA*].

By:  
[insert name]  
[insert title]  
For and on behalf of  
[]  
Date: [●]

By:  
[insert name]  
[insert title]  
For and on behalf of  
**Electricity Generating Authority of Thailand**  
Date: [●]

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Annex 3  
to  
Bank Guarantee No. [●]

### SHORTFALL NOTICE

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

1. We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this Shortfall Notice shall, unless otherwise defined in this Shortfall Notice, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.
2. We hereby notify you that [●] has defaulted in its obligations under the Demand Notice issued by us on [●] in the amount of US\$[●] (the “**Shortfall Amount**”).
3. In accordance with paragraph 11 of the Bank Guarantee, each non-defaulting Guarantor is required to pay to us the lesser of: (a) its Remaining Liability Amount; and (b) the amount set out next to its name under the “Shortfall Amount Payable” column in the table below, as calculated in accordance with paragraph 11(b) of the Bank Guarantee:

<i>Guarantor</i>	<i>Shortfall Percentage</i>	<i>Shortfall Amount Payable</i>
[●]	[●]%	US\$[●]
[●]	[●]%	US\$[●]

4. All amounts payable to us in accordance with this Shortfall Notice must be paid into the following bank account.

[insert bank account details]

By:

[insert name]

[insert title]

For and on behalf of

**Electricity Generating Authority of Thailand**

OK.



**Part III: Form of Third Security**  
**[from Financial Close Date to the end of the 15-year period commencing from and including the Commercial Operation Date, as extended pursuant to Force Majeure occurring within such 15-year period]**

To: Electricity Generating Authority of Thailand  
 53 Charansanitwong Road  
 Bang Kruai  
 Nonthaburi 11130  
 Thailand  
 (“EGAT”)

Fax Number:

Attention:

[Date]

**BANK GUARANTEE NO. [●] (the “Bank Guarantee”)**

The following financial institutions:

1. [●] Bank Public Company Limited, a financial institution incorporated under the laws of Thailand whose registered office is located at [●] (“**Commercial Securities Facility Agent**”);
2. [●], a [ ] incorporated under the laws of [ ] whose registered office is located at [●] (“**Guarantor 1**”); and
3. [●], a [ ] incorporated under the laws of [ ] acting through its Bangkok branch at [●] (“**Guarantor 2**”);

(Guarantor 1, Guarantor 2 [etc.] are each referred to in this Bank Guarantee as a “**Guarantor**”, and together as the “**Guarantors**”)

hereby establish this Bank Guarantee for the account of SouthEast Asia Energy Limited (the “**Company**”) in favor of EGAT as follows:

1. Pursuant to the Power Purchase Agreement (the “**PPA**”) dated [ ] (the “**Execution Date**”) between EGAT and the Company, the Company is required to deposit with EGAT the Third Security referred to in Section 9.1(b)(ii)(2) of the PPA for the proper and faithful performance of its obligations under the PPA in the aggregate amount of US\$ 9,000,000 (US Dollars Nine Million) (the “**Available Amount**”).
2. The Guarantors agree, subject to paragraphs 6 and 11 of this Bank Guarantee and without prejudice to paragraph 9 of this Bank Guarantee, to irrevocably guarantee as

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primary obligor and not merely as surety, the payment to EGAT of amounts not exceeding the Available Amount in respect of any amount for which EGAT claims that the Company is liable to EGAT under the PPA during the period from the Execution Date until the end of the 15-year period commencing from and including the Commercial Operation Date (such 15-year period being extended pursuant to any Force Majeure occurring within such 15-year period). The Guarantors shall make payment to EGAT in accordance with paragraphs 8 and 11 of this Bank Guarantee upon receipt by the Commercial Securities Facility Agent of a written notice of demand presented on or before the Expiry Date (as defined below) signed by a person duly authorized by EGAT and substantially in the form set out in Annex 1 to this Bank Guarantee (a “**Demand Notice**”) or a Shortfall Notice as defined in paragraph 11, as applicable.

3. The obligations of the Guarantors under this Bank Guarantee are absolute and unconditional, and the Guarantors shall make payment to EGAT without any proof or conditions and without any right of set-off or counterclaim and the Guarantors shall have no right whatsoever to object to any Demand Notice or any Shortfall Notice issued by EGAT in accordance with this Bank Guarantee.
4. The Guarantors expressly agree that EGAT shall not be required to exhaust any right, power or remedy or proceed against the Company under the PPA or any other agreement or instrument referred to in the PPA before being entitled to payment by the Guarantors under this Bank Guarantee.
5. This Bank Guarantee shall be valid and enforceable from the date on which this Bank Guarantee is issued until either:
  - (a) in the event that the PPA has not been terminated prior to the end of the 15-year period commencing from and including the Commercial Operation Date (such 15-year period being extended pursuant to any Force Majeure occurring within such 15-year period), the last day of such 15-year period (or if such day is not a Banking Day, the next succeeding Banking Day); or
  - (b) in the event that the PPA has been terminated prior to the end of the 15-year period commencing from and including the Commercial Operation Date (such 15-year period being extended pursuant to any Force Majeure occurring within such 15-year period), the date falling one hundred and eighty (180) days after termination of the PPA as notified jointly by EGAT and the Company to the Commercial Securities Facility Agent in the form set out in Annex 2 to this Bank Guarantee (or if such day is not a Banking Day, the next succeeding Banking Day),

(the “**Expiry Date**”). This Bank Guarantee ceases to be in effect on and from the date immediately following the Expiry Date and without any further action being required to be taken by any person. Notwithstanding the generality of the previous sentence, the Guarantors shall continue to remain liable for any obligations in respect of any Demand Notice or any Shortfall Notice delivered by EGAT on or prior to the Expiry Date.

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6. The liability of a Guarantor for amounts payable by it under this Bank Guarantee shall not exceed the amount as set forth next to its name under the column “Total Liability Amount” in the table below (the “**Total Liability Amount**”). Without limiting or affecting the liability of each Guarantor to make payment for any amount demanded by EGAT in a Shortfall Notice, the liability of each Guarantor with respect to any amount demanded by EGAT in a Demand Notice (the “**Demanded Amount**”) shall be the relevant Demanded Amount multiplied by the percentage as set forth next to its name under the column “Total Liability Percentage”) in the table below (the “**Total Liability Percentage**”), subject to such liability not exceeding its Total Liability Amount:

<i>Guarantor</i>	<i>Total Liability Percentage</i>	<i>Total Liability Amount</i>
Guarantor 1	●%	[US\$ ●]
Guarantor 2	●%	[US\$ ●]
Guarantor 3	●%	[US\$ ●]

7. Subject to paragraph 11 of this Bank Guarantee:
- each Guarantor’s liability under this Bank Guarantee is several and no Guarantor shall be liable for or responsible for any other Guarantor’s obligations; and
  - the obligations of each Guarantor under this Bank Guarantee are separate and independent obligations and are separately enforceable by EGAT against each Guarantor in accordance with the terms of this Bank Guarantee.
8. Each Guarantor shall honour a Demand Notice delivered to the Commercial Securities Facility Agent in accordance with this Bank Guarantee by paying, in immediately available and freely transferable funds, its Total Liability Percentage of the Demanded Amount, which shall be specified in paragraph 3 of the relevant Demand Notice. All payments to EGAT under this paragraph 8 shall be made to such account of EGAT at such bank in Thailand as is specified in such Demand Notice on the day falling ten (10) Banking Days following the date of receipt of such Demand Notice by the Commercial Securities Facility Agent; provided that if any Demand Notice is delivered by EGAT to the Commercial Securities Facility Agent later than 11:00 a.m. (Bangkok time), then the Guarantors shall not be required to honour such Demand Notice until the day falling eleven (11) Banking Days following the date of receipt of such Demand Notice by the Commercial Securities Facility Agent.
9. Notwithstanding any other provision of this Bank Guarantee, EGAT shall have the right to draw down the full amount available under this Bank Guarantee or any part thereof on or prior to the Expiry Date by issuing a Demand Notice in accordance with the provisions of this Bank Guarantee.
10. Multiple drawings are permitted under this Bank Guarantee provided that the aggregate amount of all such drawings does not exceed the Available Amount.

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11. Notwithstanding any other provision of this Bank Guarantee, if a Guarantor defaults in the payment of all or any portion of the amount required to be paid by it under this Bank Guarantee (any such unpaid amount, the “**Shortfall Amount**”), the non-defaulting Guarantors shall make payment to EGAT in accordance with this paragraph 11 upon receipt by the Commercial Securities Facility Agent of a written notice from EGAT signed by a person duly authorized by EGAT and substantially in the form of Annex 3 to this Bank Guarantee (a “**Shortfall Notice**”). Each non-defaulting Guarantor shall be liable under this paragraph 11 for an amount equal to the lesser of:
- (a) the Total Liability Amount of such non-defaulting Guarantor *minus* the total aggregate amount having been paid by such Guarantor to EGAT under this Bank Guarantee prior to the date of the relevant Shortfall Notice (such amount, the “**Remaining Liability Amount**”); and
  - (b) the relevant Shortfall Amount *multiplied by* the percentage (such percentage, the “**Shortfall Percentage**”) determined by dividing the Total Liability Percentage applicable to such non-defaulting Guarantor by the sum of the Total Liability Percentages for all non-defaulting Guarantors, which shall be specified in the relevant Shortfall Notice.

All payments to EGAT under this paragraph 11 shall be made, in immediately available and freely transferable funds, to such account of EGAT at such bank in Thailand as is specified in such Shortfall Notice on the day falling ten (10) Banking Days following the date of receipt of such Shortfall Notice by the Commercial Securities Facility Agent; provided that if any Shortfall Notice is delivered by EGAT to the Commercial Securities Facility Agent later than 11:00 a.m. (Bangkok time), then the Guarantors shall not be required to honour such Shortfall Notice until the day falling eleven (11) Banking Days following the date of receipt of such Shortfall Notice by the Commercial Securities Facility Agent.

12. For the purpose of this Bank Guarantee, a “**Banking Day**” shall mean a day when banks are open for business in Thailand and New York.
13. This Bank Guarantee is irrevocable, and no Guarantor shall in any event withdraw this Bank Guarantee for any reason during the period for which it is valid and enforceable under paragraph 5 of this Bank Guarantee.
14. This Bank Guarantee is governed by, and shall be construed in accordance with, the laws of Thailand.
15. This Bank Guarantee sets forth the entire undertaking of each Guarantor, and such undertaking shall not in any way be modified, amended, amplified or limited by reference to any document, instrument or agreement referred to in this Bank Guarantee.
16. Without prejudice to its obligations as a Guarantor under this Bank Guarantee in the event that the Commercial Securities Facility Agent is also one of the Guarantors, the

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Commercial Securities Facility Agent shall not have any liability or obligation to EGAT as a surety or guarantor as a result of any failure or delay by any Guarantor in performing its respective obligations under this Bank Guarantee.

17. (a) If, at any time in the course of the performance of the PPA, EGAT grants a time extension, or allows the Company to deviate from any terms and conditions of the PPA without the knowledge of any Guarantor, it shall be deemed that such grants shall have been made with the consent of the Guarantors.
- (b) No Guarantor shall be discharged or released from its obligations under this Bank Guarantee by any waiver or forbearance by EGAT under the PPA, whether as to payment, time, performance or otherwise, nor by any variations or amendments to the obligations and responsibilities of the Company under the PPA.
18. Any communication to be made under or in connection with this Bank Guarantee shall be made in writing and, unless otherwise stated, may be made by fax or letter. The address and fax number (and the department or officer, if any, for whose attention the communication is to be made) for any communication or document to be made or delivered under or in connection with this Bank Guarantee shall be identified, with respect to the Commercial Securities Facility Agent and the Guarantors, on the signing page of this Bank Guarantee and, with respect to EGAT, on the first page of this Bank Guarantee. Communications shall be deemed to have been received or delivered:
- (a) in the case of facsimile transmission, at the time of dispatch; or
- (b) in the case of delivery by hand, when actually received; or
- (c) in the case of delivery by post, three (3) days after the day of posting.

For the avoidance of doubt, any communication delivered by EGAT to the Commercial Securities Facility Agent under this Bank Guarantee shall be deemed to be delivered to each of the Guarantors as if such communication had been delivered to each of them separately.

19. All capitalized terms used in this Bank Guarantee shall, unless otherwise defined in this Bank Guarantee, have the meanings given to them in the PPA.

**IN WITNESS WHEREOF**, the Commercial Securities Facility Agent and the Guarantors have caused this Bank Guarantee to be signed by their authorized representatives and their corporate seal to be hereunto affixed.

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**Commercial Securities Facility Agent:**

[•] BANK PUBLIC COMPANY LIMITED

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

**Guarantor 1:**

[•]

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

**Guarantor 2:**

[•]

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

Dk.



Annex 1  
to  
Bank Guarantee No. [●]

### DEMAND NOTICE

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

1. We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this Demand Notice shall, unless otherwise defined in this Demand Notice, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.
2. We hereby make this demand on the Guarantors for payment of the sum of US\$[●] (the “**Demanded Amount**”), such amount being payable to us in accordance with the terms of the Bank Guarantee.
3. In accordance with the terms and conditions of the Bank Guarantee, each Guarantor is required to pay to us the amount set out next to its name under the “Amount Payable by each Guarantor” column in the table below:

<i>Guarantor</i>	<i>Total Liability Percentage</i>	<i>Amount Payable by each Guarantor</i>
Guarantor 1	[●]%	US\$[●]
Guarantor 2	[●]%	US\$[●]
Guarantor 3	[●]%	US\$[●]

4. All amounts payable to us in accordance with this Demand Notice must be paid into the following bank account.

[insert bank account details]

By:

[insert name]

[insert title]

For and on behalf of

**Electricity Generating Authority of Thailand**

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Annex 2  
to  
Bank Guarantee No. [●]

### TERMINATION CERTIFICATE

(To be issued in the event of termination of the PPA)

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this certificate shall, unless otherwise defined in this Termination Certificate, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.

Pursuant to paragraph 5(b) of the Bank Guarantee, we, the undersigned, hereby jointly certify and confirm to you that:

1. the date of termination of the PPA is [\_\_\_\_\_]; and
2. the Guarantors are hereby authorized to terminate the Bank Guarantee pursuant to paragraph 5(b) thereof with effect from [*insert date permitted under paragraph 5(b) of the Bank Guarantee following termination of the PPA*].

By:  
[insert name]  
[insert title]  
For and on behalf of  
[]  
Date: [●]

By:  
[insert name]  
[insert title]  
For and on behalf of  
**Electricity Generating Authority of Thailand**  
Date: [●]

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Annex 3  
to  
Bank Guarantee No. [●]

### SHORTFALL NOTICE

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

1. We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this Shortfall Notice shall, unless otherwise defined in this Shortfall Notice, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.
2. We hereby notify you that [●] has defaulted in its obligations under the Demand Notice issued by us on [●] in the amount of US\$[●] (the “**Shortfall Amount**”).
3. In accordance with paragraph 11 of the Bank Guarantee, each non-defaulting Guarantor is required to pay to us the lesser of: (a) its Remaining Liability Amount; and (b) the amount set out next to its name under the “Shortfall Amount Payable” column in the table below, as calculated in accordance with paragraph 11(b) of the Bank Guarantee:

<i>Guarantor</i>	<i>Shortfall Percentage</i>	<i>Shortfall Amount Payable</i>
[●]	[●]%	US\$[●]
[●]	[●]%	US\$[●]

4. All amounts payable to us in accordance with this Shortfall Notice must be paid into the following bank account.

[insert bank account details]

By:  
[insert name]  
[insert title]  
For and on behalf of  
**Electricity Generating Authority of Thailand**

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**Part IV: Form of Fourth Security**  
**[from Financial Close Date to Commercial Operation Date]**

To: Electricity Generating Authority of Thailand  
 53 Charansanitwong Road  
 Bang Kruai  
 Nonthaburi 11130  
 Thailand  
 (“EGAT”)

Fax Number:

Attention:

[Date]

**BANK GUARANTEE NO. [●] (the “Bank Guarantee”)**

The following financial institutions:

1. [●] Bank Public Company Limited, a financial institution incorporated under the laws of Thailand whose registered office is located at [●] (“**Commercial Securities Facility Agent**”);
2. [●], a [ ] incorporated under the laws of [ ] whose registered office is located at [●] (“**Guarantor 1**”); and
3. [●], a [ ] incorporated under the laws of [ ] acting through its Bangkok branch at [●] (“**Guarantor 2**”);

(Guarantor 1, Guarantor 2 [etc.] are each referred to in this Bank Guarantee as a “**Guarantor**”, and together as the “**Guarantors**”)

hereby establish this Bank Guarantee for the account of SouthEast Asia Energy Limited (the “**Company**”) in favor of EGAT as follows:

1. Pursuant to the Power Purchase Agreement (the “**PPA**”) dated [ ] (the “**Execution Date**”) between EGAT and the Company, the Company is required to deposit with EGAT the Fourth Security referred to in Section 9.1(b)(ii)(3) of the PPA for the proper and faithful performance of its obligations under the PPA in the aggregate amount of US\$ 6,000,000 (US Dollars SixThousand) (the “**Available Amount**”).
2. The Guarantors agree, subject to paragraphs 6 and 11 of this Bank Guarantee and without prejudice to paragraph 9 of this Bank Guarantee, to irrevocably guarantee as primary obligor and not merely as surety, the payment to EGAT of amounts not exceeding the Available Amount in respect of any amount for which EGAT claims that the Company is liable to EGAT under the PPA during the period from the Execution Date until the Commercial Operation Date. The Guarantors shall make

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payment to EGAT in accordance with paragraphs 8 and 11 of this Bank Guarantee upon receipt by the Commercial Securities Facility Agent of a written notice of demand presented on or before the Expiry Date (as defined below) signed by a person duly authorized by EGAT and substantially in the form set out in Annex 1 to this Bank Guarantee (a “**Demand Notice**”) or a Shortfall Notice as defined in paragraph 11, as applicable.

3. The obligations of the Guarantors under this Bank Guarantee are absolute and unconditional, and the Guarantors shall make payment to EGAT without any proof or conditions and without any right of set-off or counterclaim and the Guarantors shall have no right whatsoever to object to any Demand Notice or any Shortfall Notice issued by EGAT in accordance with this Bank Guarantee.
4. The Guarantors expressly agree that EGAT shall not be required to exhaust any right, power or remedy or proceed against the Company under the PPA or any other agreement or instrument referred to in the PPA before being entitled to payment by the Guarantors under this Bank Guarantee.
5. This Bank Guarantee shall be valid and enforceable from the date on which this Bank Guarantee is issued until either:
  - (a) in the event that the PPA has not been terminated prior to the Commercial Operation Date, the Commercial Operation Date (or if such day is not a Banking Day, the next succeeding Banking Day); or
  - (b) in the event that the PPA has been terminated prior to the Commercial Operation Date, the date falling one hundred and eighty (180) days after termination of the PPA as notified jointly by EGAT and the Company to the Commercial Securities Facility Agent in the form set out in Annex 2 to this Bank Guarantee (or if such day is not a Banking Day, the next succeeding Banking Day),

(the “**Expiry Date**”). This Bank Guarantee ceases to be in effect on and from the date immediately following the Expiry Date and without any further action being required to be taken by any person. Notwithstanding the generality of the previous sentence, the Guarantors shall continue to remain liable for any obligations in respect of any Demand Notice or any Shortfall Notice delivered by EGAT on or prior to the Expiry Date.

6. The liability of a Guarantor for amounts payable by it under this Bank Guarantee shall not exceed the amount as set forth next to its name under the column “Total Liability Amount” in the table below (the “**Total Liability Amount**”). Without limiting or affecting the liability of each Guarantor to make payment for any amount demanded by EGAT in a Shortfall Notice, the liability of each Guarantor with respect to any amount demanded by EGAT in a Demand Notice (the “**Demanded Amount**”) shall be the relevant Demanded Amount multiplied by the percentage as set forth next to its name under the column “Total Liability Percentage”) in the table below (the “**Total Liability Percentage**”), subject to such liability not exceeding its Total Liability Amount:

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<i>Guarantor</i>	<i>Total Liability Percentage</i>	<i>Total Liability Amount</i>
Guarantor 1	●%	[US\$ ●]
Guarantor 2	●%	[US\$ ●]
Guarantor 3	●%	[US\$ ●]

7. Subject to paragraph 11 of this Bank Guarantee:
- (a) each Guarantor's liability under this Bank Guarantee is several and no Guarantor shall be liable for or responsible for any other Guarantor's obligations; and
  - (b) the obligations of each Guarantor under this Bank Guarantee are separate and independent obligations and are separately enforceable by EGAT against each Guarantor in accordance with the terms of this Bank Guarantee.
8. Each Guarantor shall honour a Demand Notice delivered to the Commercial Securities Facility Agent in accordance with this Bank Guarantee by paying, in immediately available and freely transferable funds, its Total Liability Percentage of the Demanded Amount, which shall be specified in paragraph 3 of the relevant Demand Notice. All payments to EGAT under this paragraph 8 shall be made to such account of EGAT at such bank in Thailand as is specified in such Demand Notice on the day falling ten (10) Banking Days following the date of receipt of such Demand Notice by the Commercial Securities Facility Agent; provided that if any Demand Notice is delivered by EGAT to the Commercial Securities Facility Agent later than 11:00 a.m. (Bangkok time), then the Guarantors shall not be required to honour such Demand Notice until the day falling eleven (11) Banking Days following the date of receipt of such Demand Notice by the Commercial Securities Facility Agent.
9. Notwithstanding any other provision of this Bank Guarantee, EGAT shall have the right to draw down the full amount available under this Bank Guarantee or any part thereof on or prior to the Expiry Date by issuing a Demand Notice in accordance with the provisions of this Bank Guarantee.
10. Multiple drawings are permitted under this Bank Guarantee provided that the aggregate amount of all such drawings does not exceed the Available Amount.
11. Notwithstanding any other provision of this Bank Guarantee, if a Guarantor defaults in the payment of all or any portion of the amount required to be paid by it under this Bank Guarantee (any such unpaid amount, the "**Shortfall Amount**"), the non-defaulting Guarantors shall make payment to EGAT in accordance with this paragraph 11 upon receipt by the Commercial Securities Facility Agent of a written notice from EGAT signed by a person duly authorized by EGAT and substantially in the form of Annex 3 to this Bank Guarantee (a "**Shortfall Notice**"). Each non-defaulting Guarantor shall be liable under this paragraph 11 for an amount equal to the lesser of:

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- (a) the Total Liability Amount of such non-defaulting Guarantor *minus* the total aggregate amount having been paid by such Guarantor to EGAT under this Bank Guarantee prior to the date of the relevant Shortfall Notice (such amount, the “**Remaining Liability Amount**”); and
- (b) the relevant Shortfall Amount *multiplied by* the percentage (such percentage, the “**Shortfall Percentage**”) determined by dividing the Total Liability Percentage applicable to such non-defaulting Guarantor by the sum of the Total Liability Percentages for all non-defaulting Guarantors, which shall be specified in the relevant Shortfall Notice.

All payments to EGAT under this paragraph 11 shall be made, in immediately available and freely transferable funds, to such account of EGAT at such bank in Thailand as is specified in such Shortfall Notice on the day falling ten (10) Banking Days following the date of receipt of such Shortfall Notice by the Commercial Securities Facility Agent; provided that if any Shortfall Notice is delivered by EGAT to the Commercial Securities Facility Agent later than 11:00 a.m. (Bangkok time), then the Guarantors shall not be required to honour such Shortfall Notice until the day falling eleven (11) Banking Days following the date of receipt of such Shortfall Notice by the Commercial Securities Facility Agent.

12. For the purpose of this Bank Guarantee, a “**Banking Day**” shall mean a day when banks are open for business in Thailand and New York.
13. This Bank Guarantee is irrevocable, and no Guarantor shall in any event withdraw this Bank Guarantee for any reason during the period for which it is valid and enforceable under paragraph 5 of this Bank Guarantee.
14. This Bank Guarantee is governed by, and shall be construed in accordance with, the laws of Thailand.
15. This Bank Guarantee sets forth the entire undertaking of each Guarantor, and such undertaking shall not in any way be modified, amended, amplified or limited by reference to any document, instrument or agreement referred to in this Bank Guarantee.
16. Without prejudice to its obligations as a Guarantor under this Bank Guarantee in the event that the Commercial Securities Facility Agent is also one of the Guarantors, the Commercial Securities Facility Agent shall not have any liability or obligation to EGAT as a surety or guarantor as a result of any failure or delay by any Guarantor in performing its respective obligations under this Bank Guarantee.
17. (a) If, at any time in the course of the performance of the PPA, EGAT grants a time extension, or allows the Company to deviate from any terms and conditions of the PPA without the knowledge of any Guarantor, it shall be deemed that such grants shall have been made with the consent of the Guarantors.

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- (b) No Guarantor shall be discharged or released from its obligations under this Bank Guarantee by any waiver or forbearance by EGAT under the PPA, whether as to payment, time, performance or otherwise, nor by any variations or amendments to the obligations and responsibilities of the Company under the PPA.
18. Any communication to be made under or in connection with this Bank Guarantee shall be made in writing and, unless otherwise stated, may be made by fax or letter. The address and fax number (and the department or officer, if any, for whose attention the communication is to be made) for any communication or document to be made or delivered under or in connection with this Bank Guarantee shall be identified, with respect to the Commercial Securities Facility Agent and the Guarantors, on the signing page of this Bank Guarantee and, with respect to EGAT, on the first page of this Bank Guarantee. Communications shall be deemed to have been received or delivered:
- (a) in the case of facsimile transmission, at the time of dispatch; or
  - (b) in the case of delivery by hand, when actually received; or
  - (c) in the case of delivery by post, three (3) days after the day of posting.

For the avoidance of doubt, any communication delivered by EGAT to the Commercial Securities Facility Agent under this Bank Guarantee shall be deemed to be delivered to each of the Guarantors as if such communication had been delivered to each of them separately.

19. All capitalized terms used in this Bank Guarantee shall, unless otherwise defined in this Bank Guarantee, have the meanings given to them in the PPA.

**IN WITNESS WHEREOF**, the Commercial Securities Facility Agent and the Guarantors have caused this Bank Guarantee to be signed by their authorized representatives and their corporate seal to be hereunto affixed.

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**Commercial Securities Facility Agent:**

[•] BANK PUBLIC COMPANY LIMITED

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

**Guarantor 1:**

[•]

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

**Guarantor 2:**

[•]

\_\_\_\_\_  
(authorized signature)

Address for Notices:

Fax Number:

Attention:

DX.



Annex 1  
to  
Bank Guarantee No. [●]

### DEMAND NOTICE

To: [Name of Commercial Securities Facility\_Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

1. We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this Demand Notice shall, unless otherwise defined in this Demand Notice, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.
2. We hereby make this demand on the Guarantors for payment of the sum of US\$[●] (the “**Demanded Amount**”), such amount being payable to us in accordance with the terms of the Bank Guarantee.
3. In accordance with the terms and conditions of the Bank Guarantee, each Guarantor is required to pay to us the amount set out next to its name under the “Amount Payable by each Guarantor” column in the table below:

<i>Guarantor</i>	<i>Total Liability Percentage</i>	<i>Amount Payable by each Guarantor</i>
Guarantor 1	[●]%	US\$[●]
Guarantor 2	[●]%	US\$[●]
Guarantor 3	[●]%	US\$[●]

4. All amounts payable to us in accordance with this Demand Notice must be paid into the following bank account.

[insert bank account details]

By:  
[insert name]  
[insert title]  
For and on behalf of

Electricity Generating Authority of Thailand

OK.



Annex 2  
to  
Bank Guarantee No. [●]

### TERMINATION CERTIFICATE

(To be issued in the event of termination of the PPA)

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this certificate shall, unless otherwise defined in this Termination Certificate, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.

Pursuant to paragraph 5(b) of the Bank Guarantee, we, the undersigned, hereby jointly certify and confirm to you that:

1. the date of termination of the PPA is [\_\_\_\_\_]; and
2. the Guarantors are hereby authorized to terminate the Bank Guarantee pursuant to paragraph 5(b) thereof with effect from [*insert date permitted under paragraph 5(b) of the Bank Guarantee following termination of the PPA*].

By:  
[insert name]  
[insert title]  
For and on behalf of  
[]  
Date: [●]

By:  
[insert name]  
[insert title]  
For and on behalf of  
**Electricity Generating Authority of Thailand**  
Date: [●]

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Annex 3  
to  
Bank Guarantee No. [●]

### SHORTFALL NOTICE

To: [Name of Commercial Securities Facility Agent]  
[Address]  
Attention: [●]

#### BANK GUARANTEE NO. [●] DATED [●]

1. We refer to the above-referenced bank guarantee (the “**Bank Guarantee**”). All capitalized terms used in this Shortfall Notice shall, unless otherwise defined in this Shortfall Notice, have the same meanings given to them (either directly or by cross-reference to another document) in the Bank Guarantee.
2. We hereby notify you that [●] has defaulted in its obligations under the Demand Notice issued by us on [●] in the amount of US\$[●] (the “**Shortfall Amount**”).
3. In accordance with paragraph 11 of the Bank Guarantee, each non-defaulting Guarantor is required to pay to us the lesser of: (a) its Remaining Liability Amount; and (b) the amount set out next to its name under the “Shortfall Amount Payable” column in the table below, as calculated in accordance with paragraph 11(b) of the Bank Guarantee:

<i>Guarantor</i>	<i>Shortfall Percentage</i>	<i>Shortfall Amount Payable</i>
[●]	[●]%	US\$[●]
[●]	[●]%	US\$[●]

4. All amounts payable to us in accordance with this Shortfall Notice must be paid into the following bank account.

[insert bank account details]

By:  
[insert name]  
[insert title]  
For and on behalf of  
**Electricity Generating Authority of Thailand**

Dr .

*[Signature]*

**Schedule 28****DOCUMENT FORMS**

Generator and EGAT shall respectively prepare and then submit to the other Party after the Execution Date the forms of documents listed in Part A and Part B below.

Within thirty (30) days after the issuance of the forms by a Party to the other Party, the Parties shall meet in order to finalize those forms. The Parties shall make their best efforts to finalize and agree those forms on or before twelve (12) months after the Financial Close Date.

**Part A**

The following forms of documents to be prepared by Generator shall include:

- Declarations (Annual, Aggregate, Weekly, Derived, Interim, Final);
- Notification of outages (Generator Maintenance Outages, Generator Short-Notice Outages, Generator Forced Outages, Water Supply Outages);
- Statements (Generator Daily Metering Statements, Generator Daily Confirmation Statements, Generator Weekly Confirmation Statements, Meter Reconciliation Statement);
- Generator Payment Invoices; and
- Various notices in particular other notices for operation.

**Part B**

The following forms of documents to be prepared by EGAT shall include:

- Statements (EGAT Daily Confirmation Statements, EGAT Monthly Confirmation Statements);
- EGAT Payment Invoices; and
- Various notices in particular other notices for operation.

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**Schedule 29****ADDRESSES OF NOTICES**

Any notice or other communication between EGAT and Generator with respect to all matters related to this Agreement shall be in writing and shall be delivered by hand or sent by registered mail, courier or by facsimile transmission to the addresses or facsimile numbers set out below:

EGAT : 53 Charansanitwong Road  
Bang Kruai  
Nonthaburi 11130  
Thailand  
Fax : (66)-2433-6317

Generator : 215 Lane Xang Avenue,  
Ban Xieng Yuen, Vientiane  
Lao PDR  
Fax : 856 (0) 21 215 500

Each Party may change its postal address or facsimile number by giving ten (10) days' prior notice to the other Party in writing.

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**XAYABURI POWER**

YOUR SENSE OF ENERGY

# **POWER PURCHASE AGREEMENT**

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## **XAYABURI HYDROELECTRIC POWER PROJECT**

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BETWEEN

**ELECTRICITY GENERATING AUTHORITY OF THAILAND**

AND

**XAYABURI POWER COMPANY LIMITED**

**Dated [.....]**

**Volume Three: Grid Code**





**ELECTRICITY GENERATING AUTHORITY OF THAILAND**

**GRID CODE**

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**PF – PREFACE****PF.1 INTRODUCTION**

PF.1.1 The full benefits of interconnection of individual Power Plants with centres of Demand, via a High Voltage Transmission System, can only be realised fully if the System is subject to a certain level of central control. In particular, (1), the development and maintenance of both the Transmission System and the Power Plants must be co-ordinated and (2), the Power Plants must be subject to Central, Merit Order, Dispatch. The electricity System in Thailand has been operated by EGAT in accordance with these principles by means of internal Procedures.

PF.1.2 The introduction of Power Plants, owned and operated by Independent Power Producers (IPPs), on the System requires that these internal Procedures are published and that compliance with these Procedures is mandatory for both EGAT and IPPs. This Grid Code represents the published version of these Procedures.

**PF.2 THE GRID CODE CONTENTS**

PF.2.1 The Grid Code consists of the following main sections:

**PF.2.1.1 Glossary and Definitions**

A list of technical terms used in the individual Procedures, with their definitions.

**PF.2.1.2 Planning Procedures**

Technical and design criteria and Procedures to be followed in the planning of developments to the Transmission System, including information to be provided by Generators.

**PF.2.1.3 Connection Conditions**

Procedure covering:

- (a) the technical requirements which must be met by a Generator before Connection to the Transmission System is allowed; and
- (b) the procedure to be followed by EGAT and a Generator in seeking permission for Connection.

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**PF.2.1.4 Operating Procedures**

A series of Procedures covering the operation of the Transmission System, External Interconnectors and Generation, including:

- (a) preparation of Demand Forecasts, Scheduling and Dispatch timescales;
- (b) planning of Transmission, External Interconnector and Generation Maintenance Outages; and
- (c) operational liaison, covering, safety, communications and Event and Incident reporting.

**PF.2.1.5 Scheduling and Dispatch Procedures**

A series of Procedures covering the Scheduling and Dispatch of Generating Units, including:

- (a) daily submission, by Generators, of information on Capacity available and Operating Characteristics of their Units;
- (b) daily submission, by Externally Interconnected Parties, of information on Capacity available and Imports and Exports expected across their External Interconnectors;
- (c) preparation of the Daily Generation Program; and
- (d) Dispatch of Generating Units.

**PF.2.1.6 General Conditions**

The General Conditions part of the Grid Code is designed to achieve three ends:

- (a) A section covering general communications between EGAT, Externally Interconnected Parties and the Generators;
- (b) the rules covering "unforeseen circumstances";
- (c) the rules covering the granting of derogations to the Grid Code; and
- (d) the rules controlling modifications to, and issue of, the Grid Code.

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**GD – GLOSSARY AND DEFINITIONS****GD.1 INTRODUCTION**

GD.1.1 The Glossary and Definitions GD is intended to:

- (a) define the rules for the construction of references and matters of general interpretation of the Grid Code; and
- (b) provide a list of Defined Terms and the meaning that they take in the context of the Grid Code.

**GD.2 OBJECTIVE**

GD.2.1 The objective of GD is to reduce the chance of the provisions of the Grid Code being misunderstood.

**GD.3 GENERAL INTERPRETATION OF THE GRID CODE**

GD.3.1 The table of contents, the Preface and any headings are inserted for convenience and shall be ignored in construing the Grid Code.

GD.3.2 Unless the context otherwise requires, all references to a particular paragraph, sub-paragraph, Appendix or Schedule shall be a reference to that paragraph, sub-paragraph, Appendix or Schedule in or to that part of the Grid Code in which the reference is made.

GD.3.3 Unless the context otherwise requires, all references to EGAT are to EGAT:

- (a) in its role as owner and operator of the Transmission System; and
- (b) in its role as overall co-ordinator of the Transmission System and the Power Plants and External Interconnectors connected to this System, including its role of central Scheduling and Dispatch of Generation and Imports and Exports across External Interconnectors.

GD.3.4 Unless the context otherwise requires, the singular shall include the plural and vice versa, references to gender shall include all other genders and any references to persons shall include any individual, body corporate, corporation, joint venture, trust, unincorporated association, organisation,

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firm, partnership and any other entity, in each case whether or not having a separate legal personality.

- GD.3.5 Reference to "in writing" or "written" include typewriting, printing, lithography, facsimile and other ways of reproducing words in a legible and non-transitory way and, where this has been agreed by EGAT, messages sent via a computer to computer data link.
- GD.3.6 Where the Glossary and Definitions refers to any word or term which is more particularly defined in a part of the Grid Code, in the event of any inconsistency the definition in that part of the Grid Code will prevail over the definition in the Glossary and Definitions.
- GD.3.7 Where there is a reference to an item of data being expressed as a whole number, fractions below 0.5 shall be rounded down and fractions of 0.5 or above shall be rounded up.
- GD.3.8 All communications between EGAT and the Generators or any other Users shall be in the Thai language unless otherwise agreed, in writing, by EGAT.
- GD.3.9 All references to time are to Bangkok time and shall be given in the 24 hour clock notation, given as 2 digits (giving the hours, from 00 to 24), 2 digits (giving the minutes from 00 to 59) and the term "hours".
- GD.3.10 The following standard multiples will be used in expressing the values of energy (when expressed in Watt hours or Joules), power (when expressed in Watts or Volt Amperes) and Voltage.

Multiple	Symbol	Value
kilo	k	1,000
Mega	M	1,000,000
Giga	G	1,000,000,000
Tera	T	1,000,000,000,000

#### GD.4 GLOSSARY AND DEFINITIONS

- GD.4.1 In the Grid Code the following words and expressions (which in the Grid Code are shown emboldened) shall, unless the subject matter or context requires otherwise, bear the following meanings:

**Active Power.** The product of voltage and the in-phase component of alternating current, measured in Watts and standard multiples thereof.

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**AFC.** Automatic Frequency Control is part of AGC function where frequency regulation is performed.

**AGC.** Automatic Generation Control, being a computerised technique based at the EGAT Control Centre which automatically enables Frequency regulation and the optimization of overall generation costs by sending the signal to adjust the set-point of a Generating Unit's governor(s).

**Alternator.** A device in which a group of conductors is rotated in a magnetic field for the primary purpose of generating alternating current electricity.

**ANSI.** American National Standards Institute Incorporated

**Apparatus.** Plant or equipment connected to, or forming part of, the System and which is required for the production, control or measurement of electricity supplied to or through the System.

**Authorised Operator.** Any person that is authorised under (Act or Statute) to Generate, transmit or Supply electricity.

**Automatic Generation Control.** See AGC.

**Automatic Generation Shedding.** A computerised system which sends out signal to trip off selected generation units according to predefined circumstances.

**Automatic Voltage Regulation.** See AVR.

**Availability.** A measure of the Capacity made available for a Generating Unit within a particular period of time and calculated as MW of Capacity, multiplied by the time in hours over which it is available. Given in MWh.

**Availability Declaration.** A statement of expected Availability, made by a Generator in respect of one of its Generating Units, pursuant to Scheduling and Dispatch Procedure SDP1, paragraphs (SDP1.3.3, SDP1.4.3 or SDP1.5.1).

**Available Capacity.** The maximum continuous power generation capability of any available Generating Units and External Interconnectors at considered hour.

**AVR.** Automatic Voltage Regulation, being the continuously-acting automatic excitation control of the Alternator of a Generating Unit which controls the Generating Unit terminal voltage.

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**Black Start.** A Generating Unit Start-Up which is accomplished without any imports of Power to the Power Plant within which the Generating Unit is located.

**Black Start Capability.** The capability of a Power Plant to perform Black Starts.

**Block Load on Synchronisation.** The instantaneous output level which a Generating Unit will attain on Synchronisation.

**BTU.** British Thermal Unit.

**Business Day.** Any weekday from Monday through Friday designated by EGAT from time to time to be EGAT headquarters' working day.

**Calendar Year.** The period starting at 0000 hours on 1 January in a year and finishing at 2400 hours on the 31 December in the same Year.

**Capacity.** The achievable power output of a Generating Unit, given in MW, and net of any power used solely to drive Apparatus dedicated to this particular Generating Unit and any power output achievable as Maximum Generation.

**Central Dispatch.** The process of Scheduling Generation and issuing direct Instructions to a Generator or other Authorised Operator.

**Certificate of Readiness.** A written confirmation, issued by EGAT to a Generator, that a Connection Point has been accepted by EGAT as ready for energisation.

**Connection Point.** The point at which EGAT's System and a User's System are connected.

**Connection Conditions or CC.** The part of the Grid Code identified as the Connection Conditions.

**Contingency Reserve.** Reserve Capacity which can be called on to operate within a period of not more than 24 hours.

**Control Telephony.** Telephone system, installed primarily for System control purposes and linking the Users and EGAT.

**Correction Factor.** A fraction used for adjusting Heat Rate or Water Rate from design values to actual values.

**Daily Generation Program.** The daily schedule of Generation expected to be Dispatched produced pursuant to Scheduling and Dispatch Procedure SDP1.

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**Daily Maintenance Schedule.** The schedule showing the expected Generating Unit, Power Plant, External Interconnector and Transmission System Outages covering a single 24 hour period.

**Day Peak.** The value of the highest System Demand in the period 8.00 hours to 18.00 hours in a particular day.

**Declaration.** A statement of the expected Availability, values of Operating Characteristics or any other factors made by a Generator in respect of one of its Generating Units, pursuant to Scheduling and Dispatch Procedure SDP1, paragraphs (SDP1.3.3, SDP1.4.3 or SDP1.5.1).

**Defined Term.** A term defined in this Glossary and Definitions, GD.

**De-Loading Rate.** The rate at which a synchronised Generating Unit can reduce output under operator control and in normal operating conditions.

**Demand.** The quantity of Active and Reactive Power which it is expected that all customers will require or which they actually require.

**Demand Forecast.** A statement of the Forecast Demand and pattern of Demand which it is expected that all customers will require.

**Dependable Capacity.** The maximum continuous power generation capability of any Generating Units and External Interconnectors that considers net head of Hydro Power Plants, aging degradation, forecasted ambient temperature at the location of Generating Unit and other factors what affect to maximum continuous power generation.

**Dependable Contracted Capacity.** The maximum continuous capacity in MW for a Generating Unit for supply to EGAT which has been tested according to Schedule 14 of PPA and agreed upon by EGAT.

**De-Synchronise.** The act of shutting down a Synchronised Generating Unit and temporarily disconnecting it from the Transmission System.

**Detailed Planning Data.** Information and data in respect of a Power Plant, Embedded Power Plant or Generating Unit which is provided to EGAT for long term System planning purposes under Planning Procedure PP.

**Direct Customer.** A customer who purchases electricity directly from EGAT.

**Dispatch.** The act of issuing Instructions to Generators.

**Earthing.** The provision of an electrical connection between one or more conductors and earth.

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**Earthing Device.** A device which is designed to provide Earthing.

**Economic Operating Characteristics.** Operating Characteristics which provide information on the economics of operation of a Generating Unit of the cost or price of Imports over an External Interconnector.

**EDC.** Economic Despatch Control is part of AGC function where load sharing among various generation units which are on AGC is performed to achieve the optimal production cost taking Incremental Transmission Loss into account.

**EGAT.** The Electricity Generating Authority of Thailand.

**EGAT Control Centre or EGATCC.** EGAT's National Control Centre set up for the purposes of Scheduling and Dispatch of Generating Units, External Interconnectors and Transmission System control and switching.

**EGAT Control Engineer.** An EGAT officer authorised to Dispatch Generating Units and to issue Transmission System switching instructions.

**EGAT's System.** The combination of Apparatus operated by EGAT and which forms part of the System.

**Embedded Power Plant.** A Power Plant which provides electricity to EGAT's System but which is connected to a User's System.

**Evening Peak.** The value of the highest System Demand in the period 18.00 hours to 21.00 hours in a particular day.

**Export.** A flow of electricity from the System to an External System via an External Interconnector.

**External Interconnected Party.** A Party, other than EGAT, who, either solely or jointly with EGAT, has control of an External Interconnector.

**External Interconnected Party Control Centre.** Control centre, operated by an External Interconnected Party, which is used for the control of an External Interconnector.

**External Interconnected Party Control Engineer.** An External Interconnected Party officer authorised to control an External Interconnector.

**External Interconnector.** An Interconnection between the System and an External System.

**External Power Plant.** A Power Plant which supplies electricity to the System via an External Interconnector.

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**External System.** An electricity system located outside of the borders of Thailand.

**Field Current.** The current flowing through the field coil of the stator of an Alternator.

**Final Maintenance Schedule.** The schedule showing the expected maintenance outages which is produced by EGAT at the end of the consultation process defined in OP2.4.

**Fiscal Year.** The period starting at 0000 hours on 1 October in a year and finishing at 2400 hours on the 30 September in the next following year.

**Forecast Demand.** The level of Demand that it is expected will have to be met.

**Forecast Peak Demand.** The maximum level of Demand that it is expected will have to be met.

**Four Year Operating Plan.** A statement prepared pursuant to OP3 and covering four years, showing the expected Availability of Generating Units and the way in which they will be scheduled to meet Forecast Demand.

**Free Governor Action.** The operation of a Generating Unit where the level of output is controlled by an automatic governor.

**Frequency.** The number of alternating current cycles per second at which the System is running (expressed in Hz).

**General Conditions** or **GC.** That part of the Grid Code identified as the General Conditions.

**General Conditions 1** or **GC1.** That part of the General Conditions identified as General Provisions.

**General Conditions 2** or **GC2.** That part of the General Conditions identified as Grid Code Review.

**Generating Unit.** A combination of Prime Mover and Alternator (and such other apparatus as is uniquely identified with this machinery) which generates alternating current electricity and which is subject to Central Dispatch.

**Generation.** The production of, or the facilities required to produce, electricity.

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**Generation Transformer.** A transformer, forming part of a Generating Unit, whose primary purpose is to transform the voltage at the alternator output terminals to the required voltage at the point on the System to which the Generating Unit supplies electricity.

**Generator.** A person which is registered with EGAT as being the owner or, as the case may be, the operator of a Power Plant or, in respect of Planning Procedure PP, a proposed Power Plant.

**Generator Shedding.** The reduction in Generation brought about by the controlled disconnection of the generator.

**Glossary and Definitions or GD.** The part of the Grid Code identified as the Glossary and Definitions.

**Governor Droop.** The change in frequency to which a governor responds by causing turbine gate position to move through its full range of travel, which is generally non-linear and a function of load.

**Grid Code.** This collection of Procedures and other documents, known as the Grid Code, prepared and issued by EGAT, as from time to time revised and re-issued.

**Heat Rate.** The amount of energy used by a Generating Unit to perform a single unit of a particular service. For instance, one hour of running at zero load (given in BTU/hour), the production of 1MWh of output at a particular output level (given in BTU/MWh), or to perform one Start-Up (given in BTU/Start-Up).

**Heat Rate Curve.** A curve showing, for a particular Generating Unit, the thermal energy consumption per hour of operation at various output levels (given in BTU/hour).

**High Frequency Emergency.** A System Emergency which has caused System Frequency to rise above 50.5 Hz.

**High Voltage.** Voltage of 69 KV and above.

**Hot Standby.** The condition of the boiler of a Generating Unit where the steam is held at normal operating temperature and pressure but the turbine of the Generating Unit is not synchronised.

**Hydro.** Pertaining to the Generation of electricity through water power.

**Hydro Merit Order.** A Merit Order of only Hydro Power Plants. Based on down stream requirements and hydrological conditions.

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**Hydro Power Plant.** A Power Plant whose main source of energy input for electricity Generation is water power.

**Hz or Hertz.** A measure of Frequency, where 1 Hz = 1 cycle/second.

**IEC.** International Electro-technical Committee

**IEEE.** Institute of Electrical and Electronic Engineer.

**Import.** A flow of electricity to the System from an External System via an External Interconnector.

**Incident.** An unplanned occurrence on, or related to, the System which has caused, or could have caused, a breach of the Operating Standards or has caused injury to an individual.

**Incremental Transmission Loss.** The change in transmission loss to the change in generation of particular unit.

**Independent Power Producer.** A Generator in which EGAT does not have a majority equity interest.

**Instruct.** The action of EGAT issuing an Instruction to a Generator concerning some action to be performed by a Generating Unit operated by that Generator.

**Instruction.** An instruction issued by EGAT in respect of a Generating Unit or External Interconnector to achieve, as the case may be, a certain Active Power, Reactive Power (or target Voltage level) or Reserve Capacity level by a specified time.

**ISO.** International Standard Organization.

**Isolation.** The electrical separation of Apparatus from the System.

**Isolation Device.** A device designed to provide Isolation of Apparatus from the System.

**ITL.** Incremental Transmission Loss is the change in transmission loss to the change in generation of a particular unit.

**Joule.** A measure of energy equivalent to 1 Watt of power delivered for 1 second.

**Load Factor.** Total energy divided by the product of Peak Demand and hour over the same period.

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**Load Forecast for the Thailand Electric System.** The Demand Forecast prepared and issued by the Thailand Load Forecast sub-committee.

**Load Shedding.** The reduction in System Demand brought about by the controlled disconnection of customers.

**Load Shedding Block.** A number of customers who will be treated as a group for Load Shedding purposes.

**Loading Rate.** The rate at which a synchronised Generating Unit can increase output under operator control and in normal operating conditions.

**Local Safety Procedures.** The safety procedures implemented by EGAT or a User to cover work carried out on their side of a Connection Point.

**Losses.** Electrical energy lost in the Transmission System.

**Low Frequency Emergency.** A System Emergency which has caused System Frequency to fall below 49.5 Hz.

**Low Frequency Relay.** An automatic relay, which can detect System Frequency and is set to operate whenever System Frequency falls below a certain preset value.

**Low Frequency Automatic Load Shedding.** Load Shedding which is achieved by the operation of a Low Frequency Relay.

**Maintenance Outage.** A period of full or partial non-Availability of a Power Plant, Generating Unit or part of the Transmission System during which it is planned to carry out maintenance work.

**Maintenance Schedule.** A schedule produced by EGAT pursuant to OP2 showing the times at which it is expected that Maintenance Outage will take place.

**Manual Load Shedding.** Load Shedding which is achieved by the manual initiation of the operation of a circuit breaker.

**Maximum Generation.** For a particular Generating Unit, the level of power output deliverable above the declared Capacity which is sustainable for only short periods of time.

**MEA.** The Metropolitan Electricity Authority.

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**Merit Order.** A list of Generating Units in ascending order of marginal actual or avoided operating cost taking Start-Up and Shutdown costs, Minimum Up-Time and Minimum Down-Time, fuel constraints and other operating constraints into consideration (see also Thermal Merit Order and Hydro Merit Order).

**Minimum Down-Time.** The minimum time for which a Generating Unit must be De-Synchronised.

**Minimum Generation.** The minimum output level which a Generating Unit can safely maintain under environmental compliance limits for an indefinite period.

**Minimum Up-Time.** The minimum time for which a Generating Unit must be Synchronised.

**Modified Four Year Operating Plan.** A statement prepared for updating Four Yearly Operating Plan at mid year.

**Modified Yearly Operating Program.** A statement prepared for updating Yearly Operating Program at mid year.

**Monthly Operating Program.** A statement prepared pursuant to OP3 and covering one month, showing the expected Availability of Generating Units and the way in which they will be Scheduled to meet Forecast Demand.

**Monthly Outage Schedule.** The schedule showing the expected Generating Unit, Power Plant, External Interconnector and Transmission System Outages covering a single month.

**NEC.** National Electric Code

**NEMA.** National Electrical Manufacturers Association

**N-1 Criteria.** The System must maintain stable during and after any disturbance in the system resulting in the loss of one generating unit or one circuit of transmission lines, as well as loss of load is allowed.

**Nominal System Frequency.** 50 Hz.

**Notice to Synchronise.** The period of time required between the notification to a Generator that it is required to Start-Up a Generating Unit and the earliest time the Generating Unit can be Synchronised.

**Operating Characteristics.** The parameters which define the ability of a Generating Unit to respond to Instructions.

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**Operating Margin.** The Capacity available in operational time scales over and above that actually used to produce electricity.

**Operating Procedures or OP.** That part of the Grid Code identified as the Operating Procedures.

**Operating Procedure 1 or OP1.** That part of the Operating Procedures identified as Demand Forecasting.

**Operating Procedure 2 or OP2.** That part of the Operating Procedures identified as Maintenance Scheduling.

**Operating Procedure 3 or OP3.** That part of the Operating Procedures identified as Operational Planning.

**Operating Procedure 4 or OP4.** That part of the Operating Procedures identified as Operating Margin.

**Operating Procedure 5 or OP5.** That part of the Operating Procedures identified as Testing and Monitoring.

**Operating Procedure 6 or OP6.** That part of the Operating Procedures identified as Operational Liaison.

**Operating Procedure 7 or OP7.** That part of the Operating Procedures identified as Safety Liaison.

**Operating Procedure 8 or OP8.** That part of the Operating Procedures identified as Contingency Planning.

**Operating Program.** A statement prepared pursuant to OP3 or SDP1, showing the expected Availability of Generating Units and the way in which they will be Scheduled to meet Forecast Demand.

**Operating Reserve.** The Capacity available in operational time scales, over and above that actually used to produce electricity, which is scheduled to provide Reserve Capacity.

**Operating Standards.** Those standards relating to System integrity, security and stability which have been adopted by EGAT for use in the planning and operation of the System.

**Operation.** A scheduled or planned action relating to the operation of any part of the System.

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**Operational Effect.** An effect on the operation of any part of the System which may require EGAT or any other User to operate in a non-standard way in order to minimise the chance of the Operating Standards being breached.

**Out-of-Merit Operation.** The Instructed operation of a Generating Unit where the output from that Generating Unit displaces some or all of the output of an available Generating Unit which is higher in the Merit Order (that is, has lower marginal operating costs).

**Outage.** A period when a Power Plant, Generating Unit or part of the Transmission System is fully or partly non-operational to allow for construction, maintenance or repair work.

**Outage Program.** A program showing the expected Outages.

**Panel.** The Grid Code Review Panel set up pursuant to General Condition GC2.

**Partial Shutdown.** The situation where a significant part (but not all) of the System has become de-energised and is shut down.

**Party.** A person who is bound by any of the provisions of the Grid Code.

**PEA.** The Provincial Electricity Authority.

**Peak Demand.** The highest Demand which it is expected customers will wish to have met.

**Planned Operating Characteristics.** The expected Operating Characteristics of a Generating Unit as submitted to EGAT pursuant to the Planning Procedure PP.

**Planned Outage.** The outage of the Generating Unit during the period outside the contracted available hours, the schedule of which has been provisionably proposed by the Generator and finally arranged by EGAT.

**Planning Procedure or PP.** That part of the Grid Code identified as the Planning Procedure.

**Plant.** Apparatus within a Power Plant.

**Plant Margin.** The difference between the total Dependable Contracted Capacity and the Peak Demand.

**Power Development Plan.** The plan, produced by EGAT, which shows the expected developments on the System which will be required over the next 15 years.

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**Power Plant.** An installation comprising one or more Generating Units which can reasonably be considered as forming a single installation for operational purposes.

**Power Purchase Agreement.** An agreement between EGAT (in its role as electricity purchaser) and a Generator in respect of a single Power Plant for the Generation and sale of electricity by the Generator to EGAT.

**PPA.** A Power Purchase Agreement.

**Power Regulator.** The entity set up to govern the operations of power companies, approve tariff levels, protect consumer interests, encourage competition, and approve power development plans.

**Power System Stabilizer or PSS.** A device connected to the generator to improve damping.

**Preface or PF.** The Preface to the Grid Code, which does not form part of the Grid Code.

**Prime Mover.** An engine which is connected to, and provides the power to drive, an Alternator.

**Procedures.** The written procedure and other documents (but excluding the Contents page and the Preface) included in the Grid Code, of which this Glossary and Definitions, GD, is one.

**Prudent Practice.** The standard of practice attained by exercising that degree of skill, diligence, prudence and foresight which could reasonably be expected from a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances.

**PSS.** Power System Stabilizer - a device connected to the generator to improve damping.

**PTT.** PTT Public Company Limited.

**Pumped Storage Plant.** A Hydro Power Plant where water to the reservoir is, in the main, supplied by pumping water up to this reservoir from a lower reservoir.

**Reactive Generation.** Generation capacity which is available to produce Reactive Power.

**Reactive Power.** The product of Voltage and the 90° out-of-phase component of alternating current, measured in Volt Amperes reactive (VAr) and standard multiples thereof.

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**Reactive Reserve.** Reserve generation capacity which is available to produce Reactive Power.

**Regional Control Center or RCC.** EGAT's control center set up for the purposes of Scheduling and Dispatch of External Interconnectors and Transmission System control and switching.

**Registered Operating Characteristics.** The Operating Characteristics of a Generating Unit as registered with EGAT pursuant to the Connection Conditions, CC.

**Reliability.** The state of readiness when needed.

**Reserve.** Generation capacity which is available for use but which is not, at that moment, producing Active Power or Reactive Power.

**SCADA System.** "Supervisory Control And Data Acquisition System". A system which gathers operational data (such as System Frequency, Voltage, Load flows, breaker positions) and processes and displays it in the EGAT Control Centres.

**Safety Co-ordinator.** The individual appointed by either EGAT or a User to co-ordinate safety matters across a Connection Point, including the preparation, application, approval and revision of Local Safety Procedures.

**Scheduling.** The process of compiling and issuing the Weekly Operating Program and Daily Generation Program.

**Scheduling and Dispatch Procedures or SDP.** That part of the Grid Code identified as the Scheduling and Dispatch Procedures.

**Scheduling and Dispatch Procedure 1 or SDP1.** That part of the Scheduling and Dispatch Procedures identified as Generation Scheduling.

**Scheduling and Dispatch Procedure 2 or SDP2.** That part of the Scheduling and Dispatch Procedures identified as Generation Dispatch.

**Scheduling and Dispatch Procedure 3 or SDP3.** That part of the Scheduling and Dispatch Procedures identified as Frequency and Voltage control.

**Shutdown.** The act of shutting down a Synchronised Generating Unit and disconnecting it from the Transmission System.

**Significant Incident.** An Incident which in EGAT's reasonable opinion has caused, or could have caused, a System Emergency or serious injury to an individual.

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**Single Line Diagram.** A schematic representation of an electricity system prepared in accordance with normal electrical engineering practice and which is generally known as a single line diagram.

**Site Responsibility Schedule.** A schedule prepared by EGAT showing the ownership and operating and safety responsibilities in respect of a site.

**Spinning Reserve.** The Capacity on Synchronised Generating Units which is not providing output but which is realizable in Dispatch timescales.

**Standard Time.** The time which would be registered by a clock whose accuracy is independent of System Frequency. Thus, the difference between System Time and Standard Time is directly related to the cumulative difference between actual System Frequency and nominal System Frequency, 50 Hz (see also System Time).

**Standard Planning Data.** Information and data in respect of a Power Plant, Embedded Power Plant or Generating Unit which is provided to EGAT for long term System planning purposes under Planning Procedure PP.

**Standing Instruction.** Instruction or prescribed procedure requires to operate the system during normal and adverse conditions.

**Start-Up.** The action of taking a Generating Unit from Shutdown to being Synchronised to the System.

**Station Services.** The services within a Power Plant which are necessary to allow electricity to be Generated and which consume electricity.

**Synchronise.** The action of carrying out the connection of a Generating Unit to the System such that the Frequency and phase relationship of the Generating Unit and the System are identical.

**System.** The combination of EGAT's System and all User's Systems, being the Transmission System, connected Power Plants and the External Interconnectors.

**System Demand.** The actual or forecast Demand on the System.

**System Emergency.** A situation where the integrity, safety or stability of all or part of the System is threatened.

**System Emergency Action Sheet.** The written procedure, not being part of the Grid Code, issued by EGAT to Authorised Operator, which defines the actions to be taken during an actual or potential System Emergency.

**System Frequency.** The actual Frequency of the System.

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**System Time.** The time which would be registered by a clock whose accuracy is directly related to System Frequency. Thus, the difference between System Time and Standard Time is directly related to the cumulative difference between actual System Frequency and Nominal System Frequency, 50Hz (see also Standard Time).

**System Voltage.** The Voltage at which the relevant part or parts of the System is operating.

**Target Frequency.** The target for System Frequency, as set from time to time by EGAT.

**Target Time.** The time by which the carrying out of a Instruction must be completed.

**Thermal.** Pertaining to the Generation of electricity through the use of heat.

**Thermal Merit Order.** A Merit Order of only Thermal Power Plants.

**Thermal Power Plant.** A Power Plant whose main source of energy for electricity Generation is heat.

**Total Shutdown.** A situation where the System has been totally de-energised.

**Transmission System.** The High Voltage electricity network operated by EGAT.

**Transmission Maintenance Schedule.** The schedule showing the expected Outages of the Transmission System.

**Turbine Head.** The distance, in metres, between the mean surface level of water above the inlet to a turbine of a Hydro Power Plant and the horizontal centre line of the turbine.

**Under Frequency Automatic Load Shedding.** Load Shedding which is achieved by the operation of a Under Frequency Relay.

**Under Frequency Emergency.** A System Emergency which has caused System Frequency to fall below 49.5 Hz.

**Under Frequency Relay.** An automatic relay, which can detect System Frequency and is set to operate whenever System Frequency falls below a certain pre-set value.

**Unscheduled Breakdown.** The unexpected failure of a Generating Unit, External Interconnector or part of the Transmission System.

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**User.** Any person, other than EGAT, making use of the Transmission System.

**User's System.** The combination of Apparatus operated by a User and which forms part of the System.

**V.** Volts.

**VA.** Volt Amperes.

**VAR.** Volt Amperes reactive, a measure of Reactive Power.

**Voltage.** The measure of electrical potential between two connected points of the System.

**Volts.** A measure of Voltage.

**Volt Amperes.** The product of the maximum Voltage and maximum current, irrespective of phase angle.

**W.** Watt.

**Warmth Condition.** The heat condition of a Thermal Generating Unit, expressed as "Hot", "Warm" or "Cold", related to the time since it was last Synchronised.

**Warmth Varying Operating Characteristics.** The Operating Characteristics of a Thermal Generating Unit, the value of which varies with the Warmth Condition of the Generating Unit.

**Water Rate.** The amount of water (m<sup>3</sup>/sec.) used by a hydro generating unit generation a single unit at particular output.

**Watt.** A measure of electrical power equal to the in-phase product of 1 Volt and 1 Ampere.

**Watt hour.** A measure of energy, calculated as the product of the Active Power (in Watts) and the time (in hours) for which it is produced.

**Weekly Operating Program.** A statement prepared pursuant to SDP1 and covering one week, showing the expected Availability of Generating Units and the way in which they will be Scheduled to meet Forecast Demand.

**Weekly Maintenance Schedule.** The schedule showing the expected Generating Unit, Power Plant, External Interconnector and Transmission System Outages covering a single week.

**Whr.** Watt hours.

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**Yearly Operating Program.** A statement prepared pursuant to OP3 and covering one year, showing the expected Availability of Generating Units and the way in which they will be Scheduled to meet Forecast Demand.

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**PP – PLANNING PROCEDURE****PP.1 INTRODUCTION**

PP.1.1 Planning Procedure PP lays down the procedures to be adopted to ensure that EGAT obtains the information required from Generators to plan the future developments of the System.

PP.1.2 In respect of this PP it is assumed that any planning data with reference to proposed External Interconnectors will be obtained by EGAT using procedures which are outside of this PP.

PP.1.3 The Generator shall inform EGAT without delay of any actual or anticipated changes to any of the information supplied under PP.3.

**PP.2 OBJECTIVE**

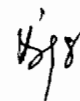
PP.2.1 The objective of this PP is to ensure that Generators provide EGAT with timely and accurate data and information to allow EGAT to plan the future development of the System.

**PP.3 PROVISION OF DATA AND INFORMATION****PP.3.1 Preliminary data and information**

A Generator shall provide to EGAT, in writing, the Standard Planning Data listed in Appendix 1 to this PP in respect of any proposed Power Plant or, as the case may be, proposed Generating Unit within an existing Power Plant:

- (a) at the time it has been agreed, in principle, with EGAT (acting in its role of electricity purchaser) that the proposed Power Plant or Generating Unit will be constructed and operated against a Power Purchase Agreement or "PPA" entered into between the Generator and EGAT, but before such agreement is signed; or
- (b) for a proposed Power Plant or Generating Unit which will not operate under a PPA with EGAT:

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- (i) at the time an application is made to EGAT to allow the proposed Power Plant or Generating Unit to be connected to EGAT's System but where no such agreement has been reached; or
- (ii) at the time an application is made to a User to allow the proposed Power Plant or Generating Unit to be connected to the User's System (where the Power Plant concerned will be referred to as an Embedded Power Plant) but where no such agreement has been reached.

### PP.3.2 Committed Data and Information

A Generator shall provide to EGAT, in writing, the Standard Planning Data and the Detailed Planning Data listed in Appendix 1 to this PP in respect of any proposed Power Plant or, as the case may be, proposed Generating Unit within an existing Power Plant:

- (a) at the time a Power Purchase Agreement (in respect of the proposed Power Plant or Generating Unit) has been concluded with EGAT (acting in its role of electricity purchaser) but before such Power Plant or Generating Unit has been declared as ready to commence commissioning; or
- (b) for a proposed Power Plant or Generating Unit which will not operate under a PPA with EGAT:
  - (i) at the time an agreement has been reached with EGAT to allow the proposed Power Plant or Generating Unit to be connected to EGAT's System but before such Power Plant or Generating Unit has been declared as ready to commence commissioning; or
  - (ii) at the time an agreement has been reached with a User to allow the proposed Power Plant or Generating Unit to be connected to the User's System (where the Power Plant concerned will be referred to as an Embedded Power Plant) but before such Power Plant or Generating Unit has been declared as ready to commence commissioning.

### PP.3.3 Connected Data and Information

A Generator shall provide to EGAT, in writing, the Standard Planning Data and the Detailed Planning Data listed in Appendix 1 to this PP in respect of any Power Plant or, as the case may be, Generating Unit within an existing Power Plant for which such information has been submitted under PP.3.1 and PP.3.2 but has not previously been submitted under this PP.3.3 at a time which is no less than 10 Business Days before the first day on which the relevant Connection Point is energised by means of the Generating Unit producing electricity.

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**PP – APPENDIX 1****PPA1.1 INTRODUCTION**

Each Generator will submit the information details below in accordance with the provisions of this PP.

**PPA1.2 STANDARD PLANING DATA**

The following Standard Planning Data shall be submitted according to the requirements of this PP:

- (a) name of the person making this submission; [EGAT to be provided name, address, telephone number.]
- (b) name of the Power Plant to which these data refer;
- (c) location of the Power Plant to which these data refer; [EGAT to be provided map.]
- (d) type of Power Plant and technology proposed, including:
  - (i) Thermal, Hydro, pump storage, wind, other;
  - (ii) if Thermal, then open cycle gas turbine, combined cycle gas turbine, steam turbine, reciprocating engine, emission control technology, source of cooling water, cooling water requirements as m<sup>3</sup>/hour at full load;
  - (iii) Black Start Capability of Power Plant
- (e) identification of each Generating Unit to which these data refer;
- (f) for each Generating Unit identified under PPA1.2 (d):
  - (i) rated MVA and MW;
  - (ii) short circuit ratio;
  - (iii) inertia constant (MWseconds/MVA);
  - (iv) Generating Unit step-up transformer MVA rating, reactance and tap details;

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- (v) expected date for start of commissioning;
- (vi) expected fuels to be used;
- (vii) model of machine and parameters;
- (viii) incremental Heat Rate/Water Rate and Correction to adjust overall efficiency from time to time.
- (ix) Black Start Capability details.

PPA1.3 DETAILED PLANNING DATA

The following Detailed Planning shall be submitted according to the requirements of this PP:

- (a) name of the person making this submission;
- (b) name of the Power Plant to which these data refer;
- (c) identification of each Generating Unit to which these data refer;
- (d) for each Generating Unit identified under PPA1.3 (c) giving values of the expected Operating Characteristics other than the Economic Operating Characteristics (as given in SDP1A1) which shall, for the purpose of this submission, be classed as the Planned Operating Characteristics;
- (e) information on the Generation and Station Transformers;
- (f) details of all protection equipment and settings;
- (g) Single Line Diagram of the Power Plant;
- (h) A diagram illustrating protective devices to prevent short circuits, overcurrent, undervoltage or overvoltage, under frequency or over frequency, out-of-phase reclosing and distribution of electricity to EGAT's System when there is no current in the interconnecting line;
- (i) Confirmation that the Power Plant conforms in all respects with the technical standards laid down in the Connection Conditions, CC.

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**CC – CONNECTION CONDITIONS****CC.1 INTRODUCTION**

CC.1 The Connection Conditions CC specifies the minimum technical requirement to be met by a Generator, in respect of its Generating Units, wishing to connect to the System and the procedure to be followed to ensure compliance with these conditions.

**CC.2 OBJECTIVE**

CC.2.1 The objective of this CC is to ensure that:

- (a) the technical and operation conditions which must be met by a Generator for connection to the System are clearly stated; and
- (b) Power Plant and Generating Units are only connected to the System if the technical and operational conditions, laid down in this CC, are met.

**CC.3 EGAT'S SYSTEM PERFORMANCE CHARACTERISTICS**

CC.3.1 EGAT will ensure that, subject to the provisions of CC.3.2, the conditions on EGAT's System, if energised, at the point where it forms a Connection point with a User's System, will comply with the following operational criteria:

- (a) System Frequency shall be nominally 50Hz and will not normally be less than 49.5Hz or more than 50.5Hz (although in exceptional circumstances it could fall to 47Hz or rise to 52Hz);
- (b) System Voltage will normally be maintained within +5% of the nominal System Voltage (although in exceptional circumstances may be between +/-10% of nominal voltage);
- (c) the maximum total levels of harmonic distortion on EGAT's System under normal operating conditions and under both planned and unplanned Outage conditions (other than for infrequent short duration peaks) shall be:

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Voltage Level (kV)	Total Distortion	Individual Distortion	
		ODD	EVEN
69	2.45%	1.63%	0.82%
115 and above	1.5%	1%	0.5%

- (d) under normal operation and planned Outage conditions, the maximum negative phase sequence component of the phase voltage on EGAT's System shall not exceed 1% other than for infrequent short duration peaks with a maximum value of 2%.
- (e) Voltage Fluctuation: Voltage flicker at each Connection Point with a fluctuating load directly connected to the Transmission System shall not exceed :
- (i) at 115kv system and above, Short Term Flicker Severity(Pst)of 0.8 unit and Long Term Flicker Severity(Plt) of 0.6 Unit;
  - (ii) at below 115kv system, Short Term Flicker Severity(Pst)of 1.0 unit and Long Term Flicker Severity(Plt) of 0.8 Unit.

CC.3.2 The exceptional circumstances referred to in CC.3.1 will relieve EGAT of the obligation to comply with the System conditions referenced therein. Such exceptional circumstances may occur in the event of there being insufficient active and/or reactive power Capacity available on the System or where an Incident has taken place which, other than solely on the grounds of injury to an individual, could be classed as a Significant Incident.

#### CC.4 REQUIREMENTS RELATING TO GENERATOR'S APPARTUS

CC.4.1 Generator's Apparatus (that is plant or equipment, owned and/or operated by a Generator, which forms part of a Power Plant and is connected to the System and which is required for the production, control or measurement of electricity supplied to or through the System) shall in all respects comply with the requirements laid down in this CC.4.

##### CC.4.2 General Requirements

CC.4.2.1 All Apparatus will by designed and constructed and at all times maintained and operated in accordance with Prudent Practice and should be capable of operating under the System conditions defined in CC.3.1.

CC.4.2.2 Notwithstanding the requirements in CC.4.2.1, all Apparatus shall comply with the requirements and/or standards as are specified in Schedule 1.

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**CC.4.2.3 Each Generating Unit must be:**

- (a) able to accept the signal (4-20 mA) sent from EGAT's AGC to adjust the set-point in order to regulate the Frequency and Optimise the overall production cost;
- (b) fitted with a fast acting proportional turbine governor which, when the Generating Unit becomes temporarily isolated from the rest of the System will allow the Generating Unit to meet customers' demands and control System Frequency to 52Hz or less;
- (c) fitted with Automatic Voltage Regulation equipment to control Generating Unit terminal voltage without instability over the full operating range of the Generating Unit;
- (d) fitted with Power System Stabilizers.
- (e) equipped with inadvertent energising protection to avoid the energising while the Generating Unit is shut down or run on turning gear.

**CC.4.2.4 Each Generating Unit must be capable of operating at its then current Capacity:**

- (a) at any System Frequency in the range 49.5Hz to 50.5Hz, and any decrease in Active Power output at System Frequencies less than 49.5Hz but not less than 47Hz shall be no greater than pro rata with System Frequency; and
- (b) at Connection Point any power factor between 0.9 lagging and 0.9 leading.

**CC.4.3 Communication Equipment at a Power Plant**

**CC.4.3.1** The Generator shall install, maintain and operate two independent voice communication links between the Generator's Power Plant control room and the EGAT Control Centre. These voice links shall be the Control Telephony associated with this Power Plant and shall be used for System operational purposes only.

**CC.4.3.2** The Generator shall install, maintain and operate a facsimile machine, with a dedicated telephone line and number, located in the Generator's Power Plant control room and shall inform EGAT of the telephone number of this facsimile machine and shall have obtained from EGAT the telephone number of the facsimile machine or machines installed in the EGAT Control Center for operational purposes (the supply of which numbers, EGAT will not unreasonably delay).

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- CC.4.3.3 The Generator shall install, maintain and operate equipment at the Power Plant to provide the EGAT Control Center with the monitoring signals as specified in CC 8.
- CC.4.3.4 The Generator shall install, maintain and operate equipment at the Connection Point which will provide the EGAT Control Center with monitoring signals as specified in CC 9.
- CC.4.3.5 The Generator shall install, Maintain and operate equipment at the Connection Point which will provide the communication link between EGAT automatic meter reading (AMR) central station and the metering equipment as specified in CCA1 Appendix 1 for the purpose of metering data collection and/or time synchronization.
- CC.5 PROCEDURE FOR CONNECTION
- CC.5.1 Submission of Data and Information
- CC.5.1.1 Responsibilities of the Generator
- CC.5.1.1.1 At least 10 Business Days prior to the date on which energising the Connection Point is requested, the Generator shall have, in respect of this Power Plant and its associated Connection Point:
- (a) complied fully with the requirements of Planning Procedure, PP and shall, in particular, have submitted the data and information required pursuant to Planning Procedure PP.3.3 "Connection data and information";
  - (b) complied fully with the requirements of Operating Procedure, OP7 ("Safety Liaison");
  - (c) submitted to EGAT a written request for energising of the Connection Point and the earliest date on which the Generator would wish this to take place;
  - (d) submitted to EGAT the information necessary for EGAT to prepare a Site Responsibility Schedule, giving, for the Power Plant:
    - (i) a schedule of the all Apparatus;
    - (ii) a list of the individuals employed by the Generator who will be responsible for giving and receiving data and information required under Grid Code Procedures OP2, OP5, OP6, OP8, SDP1, SDP2, SDP3 giving their names, job titles,

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responsibilities and, if not at the Power Plant, their normal working location;

- (e) submitted to EGAT written confirmation that its Power Plant for which agreement for connection is sought conforms fully with the requirements of CC.4 (subject to any derogations granted by EGAT under GC1).

CC.5.1.1.2 On or before the date of first energising of the Connection Point, (but before the Connection Point is energised) the Generator shall have satisfied EGAT, by the provision of evidence to EGAT in a form which EGAT shall reasonably require, that the Generator has obtained all necessary Government authorization required to be obtained by the Generator for the construction and operation of the Power Plant in accordance with the provisions of all applicable Laws.

CC.5.1.1.3 At least 60 Business Days prior to the date on which energizing the Connection Point is scheduled/requested, the Generator shall have, in respect of the Power Plant and associated equipment, provided the details as specified in the form in CCA2.

CC.5.1.2 Responsibilities of EGAT

CC.5.1.2.1 prior to the date on which energising the Connection Point, is requested, EGAT shall have without unreasonable delay and in respect of this Power Plant and its associated Connection Point:

- (a) complied fully with the requirements of Operating Procedure, OP7 ("Safety Liaison");
- (b) prepared, agreed with and submitted to the Generator a Site Responsibility Schedule giving the following information (and, where appropriate indicating ownership and responsibility for control), for the Power Plant and on EGAT's side of the Connection Point at the Connection Point site:
- (i) a schedule of Apparatus;
  - (ii) a list of services;
  - (iii) a schedule of telecommunications, measurement, telemetry and control equipment;
  - (iv) a list of the individuals in EGAT who will be responsible for giving and receiving data and information required under Grid Code Procedures OP2, OP5, OP6, OP8, SDP1, SDP2, SDP3 giving their names, job titles, responsibilities and, if not at the

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EGAT Control Center or, as the case may be, the Power Plant, their normal working location;

- (c) details of the Local Safety Procedures agreed and the names of the Safety Co-ordinators, pursuant to the requirements of OP7.

CC.5.2 Inspection of Connection Point

CC.5.2.1 EGAT shall agree a date for the inspection of the Connection Point with the Generator (which date shall not be earlier than the date requested by the Generator under CC.5.1.1, but shall not be unreasonably delayed by EGAT beyond that date) to carry out an inspection (and such tests as are required) of the Connection Point, and any associated Apparatus, to the extent that it reasonably considers that this is necessary to ensure that energising the Connection Point will not jeopardise the safe and secure operation of the EGAT System.

CC.5.2.2 When EGAT reasonably considers that the Connection Point is in all ways ready for the energising, it shall issue to the Generator a Certificate of Readiness. In all other cases EGAT shall report the results of this inspection, in writing, to the Generator. This report shall detail any areas where, in EGAT's reasonable opinion, the Connection Point or any associated Apparatus is not ready to allow energising of the Connection Point.

CC.5.2.3 In the case where EGAT has reported that the Connection Point or any associated Apparatus is not ready for the energising of the Connection Point to go ahead, the Generator shall make such changes to the Apparatus and/or Connection Point as are required and shall inform EGAT when a further inspection can take place. EGAT and the Generator shall agree a date for this inspection (such agreement not to be unreasonably withheld).

CC.5.3 Energising the Connection

Following the issue by EGAT to the Generator of a [Certificate of Readiness], the Connection Point shall be energised at a date agreed between EGAT and the Generator, such agreement not to be unreasonably withheld.

CC.6 REGISTERED OPERATING CHARACTERISTICS

Information which is required to be submitted as part of the Detailed Planning Information and is classified as Planned Operating Characteristics (under the provisions of Planning Procedure, PP) will be revised as necessary following the energising of the relevant Connection Point and commissioning of each new Generating Unit within the Power Plant. The revised values of the Planned Operating Characteristics will be

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taken as the Registered Operating Characteristics of the Generating Unit (which value shall reflect the true operating characteristics of the Generating Unit, determined in accordance with Prudent Practice).

CC.7 SCHEDULE 1: REQUIREMENTS AND STANDARDS TO BE ADOPTED FOR APPARATUS FOR CONNECTION TO EGAT'S SYSTEM

CC.7.1 (a) All circuit breakers, switch disconnectors, disconnectors, Earthing Devices, power transformers, voltage transformers, reactors, current transformers, surge arresters, bushings, neutral equipment, capacitors, line traps, coupling devices, external heavy polluted condition insulation and insulation co-ordination at the Generator/EGAT Connection Point shall comply with the ANSI/IEEE standards or NEC/NEMA codes. except for certain devices where other standards are preferred and explicitly specified.

(b) Plant and Apparatus shall be designed, manufactured and tested in premises certified in accordance with the quality assurance requirements of ISO 9000 as current at the Transfer Date (or equivalent as reasonably approved by EGAT).

CC.7.2 Requirements relating to Generator/EGAT Connection Points

CC.7.2.1 Each connection between a Generating Unit and the EGAT Transmission System must be controlled by a circuit breaker capable of interrupting the maximum short circuit current at the point of connection. EGAT will supply on request to a generator values of short circuit current and the rating of EGAT circuit breakers at existing and committed Connection Points for future years. The maximum value of short circuit current at the Connection Point for a given system voltage shall not exceed the following:

(a) 50 kA on 500 kV and 230 kV systems;

(b) 31.5 kA on 115 kV and 69 kV systems.

CC.7.2.2 Generating Unit and Power Station Protection Arrangements

CC.7.2.2.1 Minimum requirements protection of Generating Units and their connections to the EGAT Transmission System must meet the minimum requirements given below. These are necessary to reduce to a practical minimum impact on the EGAT Transmission System of faults on circuits owned by Generators.

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**CC.7.2.2.2 Fault Clearing Times**

(a) The fault clearance times for faults on the Generator's equipment directly connected to the EGAT Transmission System and for faults on the EGAT Transmission System directly connected to Generator's equipment, from fault inception to the circuit breaker arc extinction, shall be:-

- (i) 80ms at 500 kV
- (ii) 100ms at 230 kV
- (iii) 120ms at 115 kV and 69kV;

but this shall not prevent the Generator or EGAT from having faster fault clearing times.

(b) For the event that the above fault clearing times are not met as a result of failure to operate on the Primary Protection System(s) provided, the Generator shall provide Backup Protection. EGAT shall also provide back-up protection and these backup protections will be coordinated so as to provide proper Discrimination. Such Generator's Backup Protection is required to withstand, without tripping, the loading incurred during the clearing of an unclear fault or a fault on the EGAT Transmission System by breaker fail protection or by Backup Protection. To prevent the risk of inadvertent disconnection of a Generating Unit, a necessary time delay of 1.5 seconds shall be provided for the Generator Backup Protection, which is set to reach into the EGAT Transmission System, to coordinate with the Backup Protection provided by EGAT.

(c) When the Generating Unit is connected to the EGAT Transmission System at any Connection Point and a circuit breaker(s) is provided to interrupt fault current interchange with the EGAT Transmission System, or Generator's System, as the case may be, circuit breaker fail protection shall be provided on this circuit breaker(s). In the event, following operation of a protection system, of a failure to interrupt fault current by these circuit breakers within a normal fault current interrupt time, the circuit breaker failure protection is required to initiate tripping of all the necessary electrically adjacent circuit breakers so as to interrupt the fault current within the next 200ms, 200ms, and 300ms at 500kV, 230kV, and 115kV and below, respectively.

(d) The target performance for the protection Dependability Index shall be not less than 99.5 %. This is a measure of the ability of protection to initiate successful tripping of circuit breakers which are associated with the faulty item of Apparatus.

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## CC.7.2.3 Equipment to be provided

## CC.7.2.3.1 Protection of Interconnecting Connections

The requirements for the provision of protection equipment for interconnecting connections will be specified as follow:-

## Transmission Line Protection

- (a) 500kV-transmission line shall be protected by two primary pilot relaying systems. To give added security the two primary pilot relaying systems shall utilize diverse communication links. The two primary protections shall be either a directional comparison, pilot protection system (PUTT or POTT) or a current differential, pilot protection system, depending on the length of the associated connection circuits. Each primary pilot relaying system shall be capable of performing single-pole and three-pole tripping and reclosing schemes. The three-pole auto-reclosure shall be done through a synchronism check relay. Each primary distance relay shall be provided by three forward zones and a dual-polarized ground directional overcurrent relay. All distance relays shall be furnished with a fault locator and a fault record function.
- (b) 230kV-transmission line shall be protected by a primary pilot relaying system utilizing a communication link and a backup relaying system to achieve primary and backup protection systems. The primary protection shall be either a directional comparison, pilot protection system (PUTT or POTT) or a current differential, pilot protection system, depending on the length of the associated connection circuits. The primary pilot relaying system shall be capable of performing single-pole and three-pole tripping and reclosing schemes. The three-pole auto-reclosure shall be done through a synchronism check relay. The distance relay shall be provided by three forward zones distance relays and a dual-polarized ground directional overcurrent relay. All distance relays shall be furnished with a fault locator and a fault record function.
- (c) 115kV and 69kV-transmission line shall be protected by a distance relay. The distance relay shall provide a pilot relaying scheme (PUTT or POTT) utilizing a communication link, three forward zones of distance protection. The distance relay shall be capable of performing three-pole tripping and reclosing scheme. The three-pole auto-reclosure shall be done through a synchronism check relay. The distance relay shall be furnished with a fault locator and a fault record function.

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CC.7.2.3.2 Circuit-breaker failure Protection

The circuit breaker failure protection equipment will be installed for every circuit breaker.

CC.7.2.3.3 Pole-slipping and Loss of Excitation Protection

Pole-slipping Protection and Protection of Loss of Excitation will be provided on Generating Units.

CC.7.2.3.4 Metering System

Generator will install Metering System for the purpose of electrical energy exchange measurement as specified in Appendix 1.

CC.8 SCHEDULE 2: REQUIREMENTS FOR REMOTE INDICATIONS MEASUREMENTS AND TELEMETRY IN A POWER PLANT

Generator's Power Plant must provide the remote terminal unit has two ports to send the signals for monitoring and control which the requirements are:-

CC.8.1 Monitoring signal to NCC and/or RCC

CC.8.1.1 Binary signals

- Generating Unit circuit breaker status ("a" contact)
- Generator "Remote/local control" (MW control) switch ("a" contact)
- Generating Unit "Fixed/free" Governor Operation status("a" contact)
- Generating Unit fuel status ("a" contact)

CC.8.1.2 Analogue signal (4-20 mA)

- Generating Unit Real power (MW)
- Generating Unit Reactive power (MVAR)
- Generating Unit Frequency (Hz)
- Generating Unit voltage (kV)
- Generating Unit fuel flow rate (T/h, MSCF/h)

CC.8.2 Analogue signal to Power plant (4-20 mA)

CC.8.2.1 - Net Real power output target set-point

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CC.8.2.2 - Net Reactive power output target set-point

CC.9 SCHEDULE 3: REQUIREMENTS FOR REMOTE INDICATIONS, MEASUREMENTS, TELEMETRY AND CONTROL AT A CONNECTION POINT

The monitoring signal which must be sent by remote terminal unit has 2 ports shown as follows

CC.9.1 Monitoring signal

CC.9.1.1 Binary signals

- Circuit breaker status ("a" contact)
- Ground switch status ("a" contact)
- Disconnecting switch status ("a" contact)

CC.9.1.2 Analogue signals (4-20 mA)

- Net Real power (MW)
- Net Reactive power (MVAR)
- Bus voltage
- Bus frequency
- Real power Set-point feed- back (MW)
- Upper Net MW regulation limit (MW)
- Lower Net MW regulation limit (MVAR)
- Loading rate (MW/min)
- Deloading rate (MW/min)

CC.9.2 Energy sale

- Energy transaction (MWh)
- Loss of potential alarm

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**CCA1 - APPENDIX 1**

The metering and its facilities shall comprise the following:

**CCA1.1 Instrument Transformers**

- (i) Each current transformers (CTs) shall have two (2) cores for main and backup energy meter of each circuit of transmission line. The accuracy class of all cores shall be 0.2s complying with IEC 60044 standard
- (ii) Each voltage transformers (VTs) shall have two (2) cores for main and backup energy meter of each circuit of transmission line. The accuracy class of all cores are 0.2 complying with IEC 60044 standard

**CCA1.2 Energy Meters**

- (i) All energy meters shall be 3 phase 4 wires measurement type, 4 quadrants measurement of active and reactive energy meter and bi-directional measurement integrally mounted in the same enclosure.
- (ii) Each metering point shall comprise of one (1) main energy meter and one (1) backup energy meter.
- (iii) The accuracy class of all energy meters for active energy shall be 0.2s complying with IEC 62052-11 and IEC 62053-22 standards, and 0.5s for reactive energy.
- (iv) The energy meter shall be either time of use (TOU) electronic type or conventional electronic type, but all meters for the Generator shall be the same type, model and manufacturer.
- (iv) The energy meter, TOU type, shall be tariff processor and data recorder, able to store load profile (energy or demand profile) in both fifteen (15) minute time interval profile and one (1) minute time interval profile.
- (v) The energy meter, conventional type (non-TOU), shall be equipped with the universal telecounting device (as specified in Item 3 of this Appendix 1) connecting to and communication on continuous basis for the purpose of data logging.

**CCA1.3 Universal Telecounting Devices**

- (i) The universal telecounting device is required only for associating with the energy meter non-TOU type in order to process and record the measured data from the energy meters.

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- (ii) Two (2) universal telecounting devices are required, one for Primary Meter and the other for Back-up Meter.
- (iii) The universal telecounting devices shall have equivalent capacity in term of both tariff processing and data storage to TOU energy meter (load profiles logging) as mentioned above in Item 2 of this Appendix 1.
- (iv) The universal telecounting devices shall be FAG 12.4 type produced by Landis + Gyr, Switzerland, and equipped with an external printer.

CCA1.4 Time synchronisation

The time of TOU energy meters (as specified in Item 2 of this Appendix 1) or universal telecounting devices (as specified in Item 2 of this Appendix 1) shall be controlled (synced) to be in limit very close to standard time, by using time synchronization signal from the EGAT automatic meter reading (AMR) central station or the Global Positioning System (GPS) clock receiver (standard time source) installed at metering site.

CCA1.5 Watt/Var Transducers

Each watt/var transducer shall be combined in the same enclosure. Each shall be 3- phase, 3-wire, and 2-element type. Each shall be designed for remote telemetering purpose.

CCA1.6 Loss-of Potential Alarm Relays (27XM)

Each energy meter and shall be provided with a loss-of-potential alarm relay for monitoring availability of the potential of the meter potential circuits.

CCA1.7 Test Switches

Each energy meter, and each watt/var transducer shall be individually provided with a test switch for testing either from an external source of energy or from the instrument transformers by means of multipole test plugs, which shall be provided for the purpose.

CCA1.8 Power Supply for Metering Equipments

Generator shall provide the reliable and sufficient power supply for metering equipment (energy meters and/or universal telecounting device, as the case may be) to ensure that these equipments always function during the period having electrical energy exchange via the metering point. The power supply should have at least two independent sources for redundant operation.

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FORM OF NETWORK PARAMETERS

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**OP1 – DEMAND FORECASTING****OP1.1 INTRODUCTION**

OP1.1.1 Operating Procedure OP1 covers the preparation of Demand Forecasts for the following purposes:

- (a) Preparation of the Five Year Operating Program;
- (b) Preparation of the Yearly Operating Program;
- (c) Preparation of the Monthly Operating Program;
- (d) Preparation of the Weekly Operating Program; and
- (e) Preparation of the Daily Generation Program.

**OP1.2 OBJECTIVE**

OP1.2.1 The objectives of OP1 are to:

- (a) define the main sources of information to be used by EGAT in the preparation of the Demand Forecasts;
- (b) describe the factors to be taken into account by EGAT in the preparation of the Demand Forecasts; and
- (c) lay down procedures which will ensure that the Demand Forecasts for different timescales are produced on a consistent basis.

**OP1.3 DEMAND FORECAST FOR FIVE YEAR OPERATING PROGRAM**

OP1.3.1 For each year of the Five Year Operating Program, the value of the monthly Peak Demand , monthly energy requirement and Reserve requirements for each month will be forecast by EGAT, taking account of:

- (a) the annual Demand Forecasts and annual Load Factors extracted from the Load Forecast for the Thailand Electric System;
- (b) historic records of monthly peak and monthly energy requirement;
- (c) the Reserve policy as determined under OP4; and

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- (d) any other information that EGAT, in its reasonable opinion, believes is relevant.

OP1.4 DEMAND FORECAST FOR YEARLY OPERATING PROGRAM

OP1.4.1 For each month of the Yearly Operating Program, the following values shall be forecast by EGAT:

- (a) the volume of electricity sales to MEA, PEA and Direct Customers;
- (b) the volume of electricity used in Station Services and Transmission System Losses;
- (c) the system monthly Peak Demand; and
- (d) the Reserve required.

OP1.4.2 In producing these forecasts, EGAT shall take account of:

- (a) the Demand Forecasts used in the production of the Five Year Operating Program;
- (b) the Annual Demand Forecasts and Annual Load Factors extracted from the Load Forecast for the Thailand Electric System;
- (c) historic records of electricity sales to MEA, PEA and Direct Customers;
- (d) historic records of system monthly Peak Demand values;
- (e) the Reserve policy as determined under OP4; and
- (f) any other information that EGAT, in its reasonable opinion, believes is relevant.

OP1.4.3 The Demand Forecasts defined in OP1.4.1 shall be completed by the first week of November of the year preceding the year for which the Yearly Operating Program is to be produced.

OP1.4.4 The Demand Forecasts defined in OP1.4.1 shall be completed by the first week of May of the year for which the Modified Yearly Operating Program is to be produced.

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OP1.5 DEMAND FORECAST FOR MONTHLY OPERATING PROGRAM

OP1.5.1 For each day of the Monthly Operating Program, the following values shall be forecast by EGAT:

- (a) the volume of electricity sales to MEA, PEA and Direct Customers;
- (b) the volume of electricity used in Station Services and Transmission System Losses;
- (c) the Day Peak and Evening Peak; and
- (d) the Reserve required.

OP1.5.2 In producing these forecasts, EGAT shall take account of:

- (a) the Demand Forecasts used in the production of the Yearly Operating Program;
- (b) historic records of electricity sales to MEA, PEA and Direct Customers;
- (c) historic records of Day Peak and Evening Peak values;
- (d) the Reserve policy as determined under OP4; and
- (e) any other information that EGAT, in its reasonable opinion, believes is relevant.

OP1.5.3 The Demand Forecasts defined in OP1.5.1 shall be completed by the end of third week of the month preceding the month for which the Monthly Operating Program is to be in effect.

OP1.6 DEMAND FORECAST FOR WEEKLY OPERATING PROGRAM

OP1.6.1 For each day of the Weekly Operating Program, the following values shall be forecast by EGAT:

- (a) the hourly load value ; and
- (b) the Reserve required.

OP1.6.2 In producing these forecasts, EGAT shall take account of:

- (a) the Demand Forecasts used in the production of the Monthly Operating Program;

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- (b) historic records of hourly load values and, in particular, the records for the latest week for which values are available;
- (c) the Reserve policy as determined under OP4; and
- (d) any other information that EGAT, in its reasonable opinion, believes is relevant.
- OP1.6.3 The Demand Forecasts defined in OP1.6.1 shall be completed on Wednesday of the week preceding the week for which the Weekly Operating Program is to be in effect.
- OP1.7 DEMAND FORECAST FOR DAILY GENERATION PROGRAM
- OP1.7.1 For each hour of the Daily Generation Program, the following values shall be forecast by EGAT:
- (a) the total Demand to be met; and
- (b) the Reserve required.
- OP1.7.2 In addition, EGAT shall forecast the value of the Day Peak and the Evening Peak, and the hours in which they will fall.
- OP1.7.3 In producing these forecasts, EGAT shall take account of:
- (a) the Demand Forecasts used in the production of the Weekly Operating Program;
- (b) historic records of Day Peak and Evening Peak values and, in particular, the records for the latest day for which values are available;
- (c) the forecast of weather for the day for which the Daily Generation Program is to be prepared;
- (d) the Reserve policy as determined under OP4; and
- (e) any other information that EGAT, in its reasonable opinion, believes is relevant.
- OP1.7.4 The Demand Forecasts defined in OP1.6.1-OP1.7.1 Shall be completed by 1200 hours on the day preceding the day for which the Daily Generation Program is to be in effect.

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**OP2 – MAINTENANCE SCHEDULING****OP2.1 INTRODUCTION**

OP2.1.1 Operating Procedure OP2 is concerned with the co-ordination of the Generating Unit, Power Plant, External Interconnector and Transmission System maintenance and the release of Generating Units and Power Plants for construction, repair and maintenance purposes.

OP2.1.2 The resulting Planned Outage Schedule produced by EGAT will have been prepared with full regard to the contents of the relevant Operating Programs and the Daily Generation Program to ensure the matching of generation output with Forecast Demand (including an allowance for Operating Reserve) produced in accordance with OP1.

OP2.1.3 In this Procedure OP2, Year 0 means the current Calendar Year, Year 1 means the next Calendar Year, Year 2 means the Calendar Year after Year 1, and so on.

OP2.1.4 Where information must, in accordance with OP2, be submitted on a particular day and that day is not a Business Day, the information shall be submitted on the last Business Day before the due day.

OP2.1.5 Whilst EGAT will make every reasonable endeavor to accommodate the Generators' requests for Outages at particular dates, considerations of System stability and economics may mean that such requests cannot be granted. All Generators must accept that, where their request has not been granted and the consultation and dispute procedure described in this OP2 has been exhausted, EGAT's decision on Outage dates is final and binding.

**OP2.2 OBJECTIVE**

OP2.2.1 The objective of OP2 is to seek to enable EGAT to harmonize the Outages of all Generating Units or Power Plants, External Interconnectors and the Transmission System, whilst:

- (a) maintaining sufficient available Generating Unit, External Interconnector and Transmission System Capacity to meet the Forecast Demand, including Operating Reserve; and
- (b) paying attention to the need to minimize the cost to the System of releasing a Generating Unit or Power Plant for Outage.

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- OP2.3 MAINTENANCE SCHEDULING: YEARS 1 TO 7
- OP2.3.1 On the first day of each of Calendar Year each Generator will provide EGAT, in writing, with a provisional Outage Program for Calendar Years 1 to 7, giving for each of its Generating Units:
- (a) the identification of the Generating Unit;
  - (b) the MW of Capacity involved;
  - (c) where the Outage is for statutory or insurance inspection reasons, the reason for the Outage and the date by which the work must be completed;
  - (d) the expected duration of the Outage, in days and weeks;
  - (e) the preferred start date for the Outage; and
  - (f) where there is a possibility of flexibility in the dates, the earliest start date and the latest finish date.
- OP2.3.2 On the first day of each of Calendar Year each Externally Interconnected Party will provide EGAT, in writing, with a provisional Outage Program for Calendar Years 1 to 7, giving for each of its External Interconnectors:
- (a) the identification of the External Interconnector;
  - (b) the MW of Capacity involved;
  - (c) the expected duration of the Outage, in days and weeks;
  - (d) the preferred start date for the Outage; and
  - (e) where there is a possibility of flexibility in the dates, the earliest start date and the latest finish date.
- OP2.3.3 Between the first day of each Calendar Year and the end of March EGAT will:
- (a) prepare an Outage Schedule for Calendar Years 1 to 7, taking account of the following:
    - (i) the Forecast Demand as laid down in the Load Forecast for the Thailand Electric System;
    - (ii) the Outage Schedule prepared in the previous Calendar Year for Years 2 to 7 (which, by the passage of time, now represents the previously agreed Outage Schedule for Years 1 to 6);

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- (iii) the submissions from the Generators made under OP2.3.1 and from Externally Interconnected Parties under OP2.3.2;
  - (iv) the requirements for Transmission System Outages;
  - (v) the need to minimize, as far as is practicable, the total costs to the System of the required Outages; and
  - (vi) any other factors which, in EGAT's reasonable opinion, are relevant;
- (b) provide each Generator, in writing and in respect of each of its Generating Units for which an Outage was requested under OP2.3.1, with the dates on which it is proposed the Outages will start and finish; and
  - (c) provide each Externally Interconnected Party, in writing and in respect of each of its External Interconnectors for which an Outage was requested under OP2.3.2, with the dates on which it is proposed the Outages will start and finish.

## OP2.3.4

Where a User (other than EGAT) is unhappy with the Outage Program allocated to any of its Generating Units or, as the case may be, External Interconnectors, it may contact EGAT, in writing and no later than the end of April, to explain its concerns. EGAT and the User shall discuss the its concerns and seek to resolve the problem. Where, in EGAT's reasonable opinion, the change requested by the User does not threaten System security or cause unreasonable additional costs to the System, EGAT shall agree to the change. If the possible resolution of the problem requires the involvement of other Users, EGAT may call a meeting of the Users involved.

## OP2.3.5

By the end of June:

- (a) each Generator will submit to EGAT an updated provisional Outage Program, in the same form and covering the same information as that submitted under OP2.3.1, which shall take account of any revisions to that Generator's Outage requirements and any revisions to the Outage Program agreed under OP2.3.4; and
- (b) each Externally Interconnected Party will submit to EGAT an updated provisional Outage Program, in the same form and covering the same information as that submitted under OP2.3.2, which shall take account of any revisions to that Externally Interconnected Party's Outage requirements and any revisions to the Outage Program agreed under OP2.3.4.

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OP2.3.6 By the end of August, EGAT will:

- (a) revise the Outage Schedule for Calendar Years 1 to 7, taking account of:
  - (i) the Outage Schedule produced under OP2.3.3;
  - (ii) any changes to the Outage Schedule agreed under OP2.3.4;
  - (iii) any revisions to a Generator's or Externally Interconnected Party's provisional Outage Program submitted under OP2.3.5;
  - (iv) the requirements for Transmission System Outages;
  - (v) the need to minimize, as far as is practicable, the total costs to the System of the requested Outages; and
  - (vi) any other factors which in EGAT's reasonable opinion are relevant;
- (b) provide each Generator, in writing and in respect of each of its Generating Units for which an Outage was requested under OP2.3.5, with the dates on which it is proposed the Outages will start and finish; and
- (c) provide each Externally Interconnected Party, in writing and in respect of each of its External Interconnectors for which an Outage was requested under OP2.3.5, with the dates on which it is proposed the Outages will start and finish.

OP2.3.7

Where a User is unhappy with the Outage Program allocated to any of its Generating Units or, as the case may be, External Interconnectors, it may contact EGAT, in writing and no later than the end of September, to explain its concerns. EGAT and the User shall discuss the its concerns and seek to resolve the problem. Where, in EGAT's reasonable opinion, the change requested by the User does not threaten System security or cause unreasonable additional costs to the System, EGAT shall agree to the change. If the possible resolution of the problem requires the involvement of other Users, EGAT may call a meeting of the Users involved.

OP2.3.8

By the end of October EGAT shall have:

- (a) produced a final version of the Final Outage Schedule for Calendar Years 1 to 7, based upon the Outage Schedule produced under OP2.3.5 and incorporating any changes agreed under OP2.3.7;

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- (b) provide each Generator, in writing and in respect of each of its Generating Units for which an Outage was requested under OP2.3.5, with the dates on which it is proposed the Outages will start and finish; and
- (c) provide each Externally Interconnected Party, in writing and in respect of each of its External Interconnectors for which an Outage was requested under OP2.3.5, with the dates on which it is proposed the Outages will start and finish.

OP2.4 MAINTENANCE SCHEDULING: YEAR 0

OP2.4.1 The basis for the Outage Schedule for Calendar Year 0 will be Calendar Year 1 of the Final Outage Schedule produced and issued at the end of October of the previous Calendar Year in accordance with OP2.3.8.

OP2.4.2 In respect of Outages in Calendar Year 0 which are either not included in the Final Outage Schedule or for which a request for maintenance outage or some parameter has changed, each Generator will promptly inform EGAT, in writing, with the following details for each of its Generating Units concerned:

- (a) the identification of the Generating Unit;
- (b) the MW of Capacity involved;
- (c) where the Outage is for statutory or insurance inspection reasons, the reason for the Outage and the date by which the work must be completed;
- (d) the expected duration of the Outage, (and the original agreed duration, as shown in the Final Outage Schedule, if appropriate) in days and weeks;
- (e) the preferred start date for the Outage; (and the original agreed start date, as shown in the Final Outage Schedule, if appropriate); and
- (f) where there is a possibility of flexibility in the dates, the earliest start date and the latest finish date.

OP2.4.3 In respect of Outages in Calendar Year 0 which are either not included in the Final Outage Schedule or for which a request for Maintenance Outage or some parameter has changed, each Externally Interconnected Party will promptly inform EGAT, in writing, with the following details for each of its External Interconnectors concerned:

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- (a) the identification of the External Interconnector;
- (b) the MW of Capacity involved;
- (c) the expected duration of the Maintenance Outage, (and the original agreed duration, as shown in the Final Outage Schedule, if appropriate) in days and weeks;
- (d) the preferred start date for the Outage; (and the original agreed start date, as shown in the Final Outage Schedule, if appropriate); and
- (e) where there is a possibility of flexibility in the dates, the earliest start date and the latest finish date.

#### OP2.4.4 Monthly Outage Schedule

OP2.4.4.1 In respect of Outages in Calendar Year 0 which are either included in the Final Outage Schedule or for which a request for Outage has been made under OP2.4.2, each Generator will, by the end of week 2 of each month provide EGAT, in writing, with the following details for the next month and for each of its Generating Units for which a Maintenance Outage is required:

- (a) the identification of the Generating Unit;
- (b) the MW of Capacity involved;
- (c) where the Outage is for statutory or insurance inspection reasons, the reason for the Outage and the date by which the work must be completed;
- (d) the expected duration of the Outage, (and the duration agreed with EGAT, if appropriate) in weeks, days and hours;
- (e) the preferred start time and date for the Outage; (and the start time and date agreed with EGAT, if appropriate); and
- (f) where there is a possibility of flexibility in the times or dates, the earliest start time or date and the latest finish time or date.

OP2.4.4.2 In respect of Outages in Calendar Year 0 which are either included in the Final Outage Schedule or for which a request for Outage has been made under OP2.4.3, each Externally Interconnected Party will, by the end of week 2 of each month provide EGAT, in writing, with the following details for the next month and for each of its External Interconnectors for which a Maintenance Outage is required:

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- (a) the identification of the External Interconnector;
- (b) the MW of Capacity involved;
- (c) the expected duration of the Outage, (and the duration agreed with EGAT, if appropriate) in weeks, days and hours;
- (d) the preferred start time and date for the Outage; (and the start time and date agreed with EGAT, if appropriate); and
- (e) where there is a possibility of flexibility in the times or dates, the earliest start time or date and the latest finish time or date.

## OP2.4.4.3

During the 4th week of each month of Calendar Year 0, EGAT will examine the Outage Schedule for the next following month and revise it as necessary, taking account of:

- (a) the Final Outage Schedule for the relevant month of Fiscal Year 0;
- (b) any revisions to the Demand Forecast for the relevant month as produced in accordance with OP1.5;
- (c) any requests for either new Maintenance Outages or revisions to Planned Outages made by either the Generators or EGAT under OP2.4.2, OP2.4.3, OP2.4.4.1 or OP2.4.4.2; or OP2.4.4.3;
- (d) any other factors in EGAT's reasonable opinion, are relevant.

## OP2.4.4.4

By the end of 4th week of each month EGAT shall have:

- (a) produced a final version of the Outage Schedule (the Monthly Outage Schedule) for the next following month, based upon the Outage Schedule produced under OP2.4.4.3;
- (b) provide each Generator, in writing and in respect of each of its Generating Units for which an Outage was requested under OP2.4.4.1, with the dates on which it is proposed the Outages will start and finish; and
- (c) provide each Externally Interconnected Party, in writing and in respect of each of its External Interconnectors for which an Outage was requested under OP2.4.4.2, with the dates on which it is proposed the Outages will start and finish.

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OP2.4.5 Weekly Outage Schedule

OP2.4.5.1 In respect of Outages in Calendar Year 0 which are either included in the Monthly Outage Schedule and for which dates have been agreed under OP2.4.4.4 or for which a request for Outage has been made under OP2.4.2, each Generator will, by 1000 hours each Wednesday provide EGAT, in writing, with the following details for the next calendar week and for each of its Generating Units for which a Maintenance Outage is required:

- (a) the identification of the Generating Unit;
- (b) the MW of Capacity involved;
- (c) where the Outage is for statutory or insurance inspection reasons, the reason for the Outage and the date by which the work must be completed;
- (d) the expected duration of the Outage, (and the duration agreed with EGAT, if appropriate) in weeks, days and hours;
- (e) the preferred start time and date for the Outage; (and the start time and date agreed with EGAT, if appropriate); and
- (f) where there is a possibility of flexibility in the times or dates, the earliest start time or date and the latest finish time or date.

OP2.4.5.2 In respect of Outages in Calendar Year 0 which are either included in the Monthly Outage Schedule and for which dates have been agreed under OP2.4.4.4 or for which a request for Outage has been made under OP2.4.3, each Externally Interconnected Party will, by 1000 hours each Wednesday provide EGAT, in writing, with the following details for the next calendar week and for each of its External Interconnectors for which a Maintenance Outage is required:

- (a) the identification of the External Interconnector;
- (b) the MW of Capacity involved;
- (c) the expected duration of the Outage, (and the duration agreed with EGAT, if appropriate) in weeks, days and hours;
- (d) the preferred start time and date for the Outage; (and the start time and date agreed with EGAT, if appropriate); and
- (e) where there is a possibility of flexibility in the times or dates, the earliest start time or date and the latest finish time or date.

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- OP2.4.5.3 During the period from 1000 hours on Wednesday to 1600 hours on Friday of the week concerned, EGAT will examine the Outage Schedule for the next following week and revise it as necessary, taking account of:
- (a) the Monthly Outage Schedule for the relevant week of Calendar Year 0;
  - (b) any revisions to the Demand Forecast for the relevant week as produced in accordance with OP1.6;
  - (c) an estimate of the current Capacity available from Generating Units, External Interconnectors and the Transmission System and an assessment of this Capacity which may become unavailable for unplanned reasons;
  - (d) any requests for Outages made by the Generators or Externally Interconnected Parties or EGAT under OP2.4.2, OP2.4.3, OP2.4.5.1 or OP2.4.5.2;
  - (e) any other factors which, in EGAT's reasonable opinion, are relevant.
- OP2.4.5.4 By 1600 hours on each Friday or the last Business Day of a week. EGAT shall have:
- (a) produced a final version of the Outage Schedule (the Weekly Outage Schedule) for the next following week, based upon the Monthly Outage Schedule produced under OP2.4.4.4;
  - (b) provide each Generator, in writing and in respect of each of its Generating Units for which an Outage was requested under OP2.4.5.1, with the dates on which it is proposed the Outages will start and finish; and
  - (c) provide each Externally Interconnected Party, in writing and in respect of each of its External Interconnectors for which an Outage was requested under OP2.4.5.2, with the dates on which it is proposed the Outages will start and finish.
- OP2.4.6 Daily Maintenance Schedule
- OP2.4.6.1 In respect of Outages in Calendar Year 0 which are either included in the Weekly Maintenance Schedule and for which dates have been agreed under OP2.4.5.4 or for which a request for Outage has been made under OP2.4.2, each Generator will, between 1000-1200 hours each day provide EGAT, in writing, with the following details for the next following day and for each of its Generating Units for which an Outage is required:

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- (a) the identification of the Generating Unit;
- (b) the MW of Capacity involved;
- (c) the expected duration of the Outage, (and the duration agreed with EGAT, if appropriate) in weeks, days and hours;
- (d) the preferred start time and date for the Outage; (and the start time and date agreed with EGAT, if appropriate); and
- (e) where there is a possibility of flexibility in the times or dates, the earliest start time or date and the latest finish time or date.

## OP2.4.6.2

In respect of Outages in Calendar Year 0 which are either included in the Weekly Maintenance Schedule and for which dates have been agreed under OP2.4.4.4 or for which a request for Outage has been made under OP2.4.3, each Externally Interconnected Party will, between 1000-1200 hours each day provide EGAT, in writing, with the following details for the next following day and for each of its External Interconnectors for which an Outage is required:

- (a) the identification of the External Interconnector;
- (b) the MW of Capacity involved;
- (c) the expected duration of the Outage, (and the duration agreed with EGAT, if appropriate) in weeks, days and hours;
- (d) the preferred start time and date for the Outage; (and the start time and date agreed with EGAT, if appropriate); and
- (e) where there is a possibility of flexibility in the times or dates, the earliest start time or date and the latest finish time or date.

## OP2.4.6.3

During the period from 1200 hours to 1600 hours on each day, EGAT will examine the Maintenance Schedule for the next following day and revise it as necessary, taking account of:

- (a) the Weekly Maintenance Schedule for the relevant day;
- (b) any revisions to the Demand Forecast for the relevant week as produced in accordance with OP1.7;
- (c) an estimate of the current Capacity available from Generating Units, External Interconnectors and the Transmission System and an assessment of this Capacity which may become unavailable for unplanned reasons;

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- (d) any requests for Outages made by the Generators or Externally Interconnected Parties under OP2.4.2, OP2.4.3, OP2.4.6.1 or OP2.4.6.2;
- (e) any other factors which, in EGAT's reasonable opinion, are relevant.

OP2.4.6.4 By 1600 hours on each day EGAT shall have:

- (a) produced a final version of the Maintenance Schedule (the Daily Maintenance Schedule) for the next following day, based upon the Weekly Maintenance Schedule produced under OP2.4.5.4;
- (b) inform any Generator for which an Outage has been agreed for any of its Generating Units in respect of the next following day as to whether or not the Generating Unit can be released for its Outage; and
- (c) inform any Externally Interconnected Party for which an Outage has been agreed for any of its External Interconnectors in respect of the next following day as to whether or not the External Interconnector can be released for its Outage.

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**OP3 – OPERATIONAL PLANNING****OP3.1 INTRODUCTION**

OP3.1.1 Operating Procedure OP3 is concerned with the production of the Operating Programs over the timescales of 1 year and 1 month. The preparation of the Operating Programs requires the matching of forecast generation output with the Forecast Demand, including Operating Reserve, produced under OP1. The Operating Programs (described in this OP3) and the Outage Schedules produced under OP2, are developed in parallel.

OP3.1.2 The obligation in this OP3 to take account of irrigation requirements and reservoir levels refers only to such matters within Thailand.

**OP3.2 OBJECTIVE**

OP3.2.1 The objective of this Procedure OP3 is to allow the production of Operating Programs which:

- (a) show the Forecast Demand and forecast Generation (including Imports and Exports across External Interconnections), allowing the adequacy of the Plant Margin to be seen;
- (b) allow the Generation, External Interconnector and Transmission System Outages to be planned taking account of the overall economics of System operation and the need to maintain System stability;
- (c) allow the optimization of the Hydro and Thermal regimes, taking account of any Imports, forecast fuel restrictions, environmental restrictions PPA contractual obligation and the need to provide irrigation water from the dams; and
- (d) assist in the identification and solution of operational problems and to allow the effectiveness of Procedures to overcome these problems to be assessed.

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- OP3.3 FIVE YEAR OPERATING PROGRAM : Year 0 to 4
- OP3.3.1 FOUR YEAR OPERATING PLAN: Year 1 to 4
- OP3.3.1.1 The Four Year Operating Plan is prepared on a Calendar Year basis. It will show the following:
- (a) a statement of monthly Generation output and Demand;
  - (b) a Generation, External Interconnector and Transmission System Outage program, prepared in accordance with OP2;
  - (c) monthly reservoir operation and irrigation plan; and
  - (d) monthly fuel consumption plan.
- The timetable for producing it is laid down below.
- OP3.3.1.2 By the first week of November of the two years preceding the year for which the Four Year Operating Plan is to be produced, EGAT will:
- (a) obtain the relevant Demand Forecasts in accordance with OP1;
  - (b) produce a draft of the expected Generation, External Interconnector and Transmission Outage Schedule for the year in accordance with OP2;
  - (c) determine, in discussion with Externally Interconnected Parties, forecasts of Imports and Exports and the cost of Imports across the External Interconnectors;
  - (d) determine irrigation demand for each month from historic and climatic data and through discussions with the Royal Irrigation Department;
  - (e) establish a Merit Order of all Power Plants, in accordance to the rules laid down in SDP1.6, and taking into account their forecast fuel availability and costs.
- OP3.3.1.3 By the end of the second week of December of the two years preceding the year for which the Four Year Operating Plan is to be produced, EGAT will:
- (a) take account of any proposed or agreed changes to the Demand Forecast (produced according to OP1) and the Maintenance Schedule (produced according to OP2);

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- (b) optimise, as far as is practicable, the parallel operation of Hydro and Thermal Power Plants, taking account of any Imports, irrigation requirements, environmental restrictions and fuel restrictions;
- (c) Prepare a first draft of the Four Year Operating Plan for internal review.
- OP3.3.1.4 By the end of December of the two years preceding the year for which the Four Year Operating Plan is to be produced, EGAT will:
- (a) finalize the Four Year Operating Plan, taking account of any factors that EGAT, in its reasonable opinion, believes are relevant; and
- (b) issue internally the Four Year Operating Plan.
- OP3.3.1.5 EGAT will revise, the Four Year Operating Plan and re-issued by the end of June of each year. The time table for producing it is laid down below.
- OP3.3.1.6 By the first week of May of the year preceding the year for which the Four Year Operating Plan is to be produced, EGAT will:
- (a) obtain the relevant Demand Forecasts in accordance with OP1;
- (b) produce a draft of the expected Generation, External Interconnector and Transmission Outage Schedule for the year in accordance with OP2;
- (c) determine, in discussion with Externally Interconnected Parties, forecasts of Imports and Exports and the cost of Imports across the External Interconnectors;
- (d) determine irrigation demand for each month from historic and climatic data and through discussions with the Royal Irrigation Department;
- (e) establish a Merit Order of all Power Plants, in accordance to the rules laid down in SDP1.6, and taking into account their forecast fuel availability and costs.
- OP3.3.1.7 By the end of the second week of June of the year preceding the year for which the Four Year Operating Plan is to be produced, EGAT will:
- (a) take account of any proposed or agreed changes to the Demand Forecast (produced according to OP1) and the Maintenance Schedule (produced according to OP2);

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- (b) optimise, as far as is practicable, the parallel operation of Hydro and Thermal Power Plants, taking account of any Imports, irrigation requirements, environmental restrictions and fuel restrictions;
- (c) Prepare a first draft of the Modified Four Year Operating Plan for internal review.

OP3.3.1.8 By the end of June of the year preceding the year for which the Four Year Operating Plan is to be produced, EGAT will:

- (a) finalize the Modified Four Year Operating Plan, taking account of any factors that EGAT, in its reasonable opinion, believes are relevant; and
- (b) issue internally the Modified Four Year Operating Plan.

OP3.3.2 YEARLY OPEARTING PROGRAM : Year 0

OP3.3.2.1 The Yearly Operating Program is prepared on a Calendar Year basis. It will show the following:

- (a) a statement of monthly Generation output and Demand;
- (b) a Generation, External Interconnector and Transmission System Outage program, prepared in accordance with OP2;
- (c) monthly reservoir operation and irrigation requirements; and
- (d) monthly fuel consumption plan

The timetable for producing it is laid down below.

OP3.3.2.2 By the first week of November of the year preceding the year for which the yearly Operating Program, EGAT will:

- (a) obtain the relevant Demand Forecasts in accordance with OP1;
- (b) produce a draft of the expected Generation, External Interconnector and Transmission Outage Schedule for the year in accordance with OP2;
- (c) determine, in discussion with Externally Interconnected Parties, forecasts of Imports and Exports and the cost of Imports across the External Interconnectors;
- (d) determine irrigation demand for each month from historic and climatic data and through discussions with the Royal Irrigation Department;

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- (e) forecast reservoir levels for each month of the year from considerations of, amongst other things, historic and climatic data and expected irrigation requirements for its Plants. Independent Power Producers shall forecast reservoir levels for their respective Plants and provide the forecasts to EGAT within this same time period;
- (f) establish a Merit Order of all Power Plants, in accordance to the rules laid down in SDP1.6, and taking into account their forecast fuel availability and costs.

OP3.3.2.3 By the end of the second week of December of the year preceding the year for which the Yearly Operating Program is to be produced, EGAT will:

- (a) take account of any proposed or agreed changes to the Demand Forecast (produced according to OP1) and the Outage Schedule (produced according to OP2);
- (b) optimise, as far as is practicable, the parallel operation of Hydro and Thermal Power Plants, taking account of any Imports, irrigation requirements, environmental restrictions and fuel restrictions;
- (c) determine the total System costs, including the costs of Generation, the costs of Imports, the costs of restrictions resulting from Generation, External Interconnector and Transmission System Outages and the costs of Out-of-Merit Operation of Thermal Power Plants; and
- (d) Prepare a first draft of the Yearly Operating Program for internal review.

OP3.3.2.4 By the end of December of the year preceding the year for which the Yearly Operating Program is to be produced, EGAT will:

- (a) finalize the Yearly Operating Program, taking account of any factors that EGAT, in its reasonable opinion, believes are relevant; and
- (b) issue internally the Yearly Operating Program.

OP3.3.2.5 EGAT will revise, the Yearly Operating Program and re-issued by the end of June of each year. The time table for producing it is laid down below.

OP3.3.2.6 By the first week of May of the year which the Yearly Operating Program is to be produced, EGAT will:

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- (a) obtain the relevant Demand Forecasts in accordance with OP1;
- (b) produce a draft of the expected Generation, External Interconnector and Transmission Outage Schedule for the year in accordance with OP2;
- (c) determine, in discussion with Externally Interconnected Parties, forecasts of Imports and Exports and the cost of Imports across the External Interconnectors;
- (d) determine irrigation demand for each month from historic and climatic data and through discussions with the Royal Irrigation Department;
- (e) forecast reservoir levels for each month of the year from considerations of, amongst other things, historic and climatic data and expected irrigation requirements for its Plants. Independent Power Producers shall forecast reservoir levels for their respective Plants and provide the forecasts to EGAT within this same time period;
- (f) establish a Merit Order of all Power Plants, in accordance to the rules laid down in SDP1.6, and taking into account their forecast fuel availability and costs.

OP3.3.2.7 By the end of the second week of June of the year which the Yearly Operating Program is to be produced, EGAT will:

- (a) take account of any proposed or agreed changes to the Demand Forecast (produced according to OP1) and the Maintenance Schedule (produced according to OP2);
- (b) optimise, as far as is practicable, the parallel operation of Hydro and Thermal Power Plants, taking account of any Imports, irrigation requirements, environmental restrictions and fuel restrictions;
- (c) determine the total System costs, including the costs of Generation, the costs of Imports, the costs of restrictions resulting from Generation, External Interconnector and Transmission System Outages and the costs of Out-of-Merit Operation of Thermal Power Plants; and
- (d) prepare a first draft of the Modified Yearly Operating Program for internal review.

OP3.3.2.8 By the end of June of the year which the Yearly Operating Plan is to be produced, EGAT will:

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- (a) finalize the Modified Yearly Operating Program, taking account of any factors that EGAT, in its reasonable opinion, believes are relevant; and
- (b) issue internally the Modified Yearly Operating Program.

#### OP3.4 MONTHLY OPERATING PROGRAM

OP3.4.1 The Monthly Operating Program is prepared on a calendar month basis and is based upon the relevant month of the Yearly Operating Program. It will show the following:

- (a) a statement of daily Generation output, Imports and Demand;
- (b) a Generation, External Interconnector and Transmission System Outage program, prepared in accordance with OP2; and
- (c) daily reservoir operation and irrigation requirements. The timetable for producing it is laid down below.

OP3.4.2 Between the start of week 3 of the preceding month and the end of that month, EGAT will:

- (a) obtain the relevant Demand Forecasts in accordance with OP1;
- (b) produce a draft of the expected Generation, External Interconnector and Transmission Maintenance Schedule for the month in accordance with OP2;
- (c) determine, in discussion with Externally Interconnected Parties, forecasts of Imports across the External Interconnectors;
- (d) determine irrigation demand for each week of the month from historic and climatic data and through discussions with the Royal Irrigation Department;
- (e) forecast reservoir levels for each week of the month from considerations of, amongst other things, historic and climatic data and expected irrigation requirements;
- (f) optimise, as far as is practicable, the parallel operation of Hydro and Thermal Power Plants, taking account of Imports, irrigation requirements, environmental restrictions and fuel restrictions;

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- (g) establish a Merit Order of all Power Plants, in accordance to the rules laid down in SDP1.6, and taking into account their forecast fuel availability and costs.
- (h) determine the total System costs, including the costs of Generation, the costs of restrictions resulting from Generation and Transmission System Outages and the costs of Out-of-Merit Operation of Thermal Power Plants; and
- (i) issue the Monthly Operating Program.

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**OP4 – OPERATING MARGIN****OP4.1 INTRODUCTION**

OP4.1.1 Operating Procedure OP4 sets out the rules for determining the Operating Margin to be scheduled and dispatched on the System.

**OP4.2 OBJECTIVE**

OP4.2.1 The objective of OP4 is to set out and describe the Operating Margin which may be utilised by EGAT pursuant to the operation of Operating Procedures OP2 and OP3 and Scheduling and Dispatch Procedures SDP.

**OP4.3 CONSTITUENTS OF OPERATING MARGIN**

OP4.3.1 The Operating Margin comprises Dependable Reserve, Available Reserve, Quick-Start Reserve, Spinning Reserve and Area Control Reserve.

**OP4.3.2 Dependable Reserve**

OP4.3.2.1 Dependable Reserve is the margin of total Dependable Capacity of Generating Units and External Interconnectors over Forecast Peak Demand.

OP4.3.2.2 Dependable Reserve is provided for planned maintenance, unplanned reduction of Generating Unit or External Interconnectors and unplanned increases in Forecast Peak Demand.

OP4.3.2.3 The amount of Dependable Reserve required will be determined by Government Policy.

**OP4.3.3 Available Reserve**

OP4.3.3.1 Available Reserve is the margin of total Available Capacity of Generating Units except mothball Generating Units and External Interconnectors over Forecast Peak Demand.

OP4.3.3.2 Available Reserve is provided for unplanned reduction of Generating Unit or External Interconnectors Availabilities and unplanned increases in Forecast Peak Demand.



- OP4.3.3.3 The amount of Available Reserve required will be determined by EGAT based on historical unplanned reduction of Generating Units and External Interconnectors Availabilities, and unplanned increase in Forecast Peak Demand.
- OP4.3.4 Quick-Start Reserve
- OP4.3.4.1 Quick-Start Reserve is the total Available Capacity of non-synchronized Generating Units that can synchronized to the System after dispatching in 30 minutes.
- OP4.3.4.2 Quick-Start Reserve is provided for emergency reduction of Generating Unit or External Interconnectors Availabilities and unplanned increases in Forecast Demand.
- OP4.3.4.3 The amount of Quick-Start Reserve required will be determined by EGAT based on historical emergency outage of Generating Units and External Interconnectors, and historical error of Forecast Demand.
- OP4.3.5 Spinning Reserve
- OP4.3.5.1 Spinning Reserve is the margin of total Available Capacity of synchronized Generating Units and External Interconnectors over the demand deducted pumping load.
- OP4.3.5.2 Spinning Reserve is provided for sudden reduction of Generating Unit or External Interconnectors availabilities and demand changing.
- OP4.3.5.3 The amount of Spinning Reserve required will be determined by EGAT based on N-1 criteria.
- OP4.3.6 Area Control Reserve
- OP4.3.6.1 Area is a part of the System which has one or more of the following constraints:
- (a) transmission constraints that limit import power to the area;
  - (b) fuel constraint that has minimum fuel consumed requirement due to the securities of fuel supply; or
  - (c) any relevant constraints that make some Must Run Capacity in the area.
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- OP4.3.6.2 Area Control Reserve is the margin of
- (a) total Available Capacity of Generating Units and External Interconnectors in the area plus limited import power from tie line over Forecast Peak Demand of the area;
  - (b) total Available Capacity of Generating Units which has fuel constraint in the area over the minimum generation requirement to consume that fuel; and
  - (c) total Available Capacity of Must Run Generating units over the Must Run capacity requirement.
- OP4.3.6.3 Area Control Reserve is provided for unplanned reduction of Generating Unit and External Interconnectors Availabilities or limited import power to the area and unplanned increases in Forecast Peak Demand of the area.
- OP4.3.6.4 Area Control Reserve will be determined by EGAT based on;
- (a) historical unplanned reduction of Generating Unit availabilities;
  - (b) historical unplanned reduction of limited import power to the area; and
  - (c) historical unplanned increases in Forecast Peak Demand of the area.
- OP4.3.7 That component of the Operating Margin shall available within 5 minutes from the time of a Frequency change or a Instruction pursuant to SDP2 and is sustainable for a period of four hours.
- OP4.4 RESERVE POLICY
- OP4.4.1 In preparing the Demand Forecasts (as laid down in OP1), the Maintenance Schedule (as laid down in OP2), the Operating Programs (as laid down in OP3 and SDP1) and the Daily Generation Program (as laid down in SDP1) and in Dispatching Generation, Imports or Demand (as laid down in SDP2 and SDP3), EGAT shall set the levels of Reserve and consider the requirements for in accordance with the requirements of this OP4.
- OP4.4.2 In Scheduling and Dispatch of Generating Units or Imports (or, as the case may be, Demand), EGAT, to the extent that it believes that it is reasonable so to do, shall take account of the total fuel cost of the Thermal Generating Units, any restrictions on Hydro Power Plant operation, the Operating Characteristics of the Generating Units and any other constraints on System operation.

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**OP5 – MONITORING AND TESTING****OP5.1 INTRODUCTION**

OP5.1.1 Operating Procedure OP5 is concerned with the monitoring of Generating Unit performance and the calling for specific tests of Generating Units.

OP5.1.2 The monitoring of Generating Unit performance will be carried out to allow EGAT to ascertain if there is reason to believe that a Generating Unit cannot operate in compliance with its Operating Characteristics.

OP5.1.3 The testing of Generating Unit performance may be carried out:

- (a) at any time, subject to certain restrictions, by EGAT to confirm the values of the Generating Unit's Operating Characteristics;
- (b) if EGAT reasonably believes, following monitoring of the Generating Unit's performance, that it cannot operate in compliance with its Operating Characteristics; or
- (c) if Generator wishes a test performed on its own Generating Unit following the correction of a problem which, following previous monitoring or a previous test, had caused an Operating Characteristic of that Generating Unit to be revised.

OP5.1.4 In this OP5, the term Operating Characteristic excludes all Economic Operating Characteristics (which shall not be subject to monitoring or test).

**OP5.2 OBJECTIVE**

OP5.2.1 The objective of this OP5 is to:

- (a) ensure that a means exists for EGAT to confirm the actual value of any Operating Characteristic in respect of any Generating Unit;
- (b) provide a mechanism which obliges a Generator to revise the value of any Operating Characteristic where monitoring or testing suggests that the current offered value is incorrect; and
- (c) provide a mechanism which allows a Generator to call for a test of its own Generating Unit when a problem which has caused it to revise the value of any Operating Characteristic has been corrected.

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## OP5.3 MONITORING

OP5.3.1 EGAT may at any time monitor the performance of a Generating Unit by comparing its actual output (or response) with the output (or response) which it should achieve according to its then current Declaration of Operating Characteristics (made pursuant to SDP1) and the Instructions to which it should comply (save only that, if the extent of failure to follow the Instruction is within the allowable tolerances given in SDP2.5.2.2, then no failure will be assumed).

OP5.3.2 If, through its monitoring of a Generating Unit's performance, EGAT determines that, in its reasonable opinion:

- (a) the Generating Unit is failing persistently to meet any of its then current Operating Characteristics; or
- (b) the Generating Unit has failed to meet its then current Operating Characteristics in a way, as defined in OP5.3.5, which requires action to be taken even though the failure is not persistent;

then EGAT shall notify the relevant Generator giving details of the monitoring which has been carried out and the results of this monitoring.

OP5.3.3 Upon receipt of the notification issued under OP5.3.2, the Generator will, as soon as possible, provide EGAT, in writing with:

- (a) an explanation of the failure;
- (b) revised values of the relevant Operating Characteristics which it proposes to include in its Declarations made under SDP1; and
- (c) its proposals to rectify the problem.

OP5.3.4 EGAT and the Generator will discuss the Generator's submission made under OP5.3.3 and will try to reach agreement about the Generator's proposals and the revised values of the Operating Characteristics. If such agreement is reached then the Generator will declare such revised value or values (under SDP1) until such time as the problem causing the revision to the Operating Characteristic has been solved and the Generator has provided such evidence to EGAT as EGAT may reasonably require (which may include a test of the Generating Unit). If no such agreement is reached within 3 Business Days then EGAT reserves the right to call for a test of the Generating Unit.

OP5.3.5 The types of failure which are of such severity that evidence of persistent failure is not required (as required by OP5.3.2 (b)) are:

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- (a) failure to Synchronise when Instructed;
- (b) De-Synchronising when not so Instructed.

OP5.4 TESTING

OP5.4.1 Testing procedure

OP5.4.1.1 All tests (other than those concerning automatic frequency response, the notification procedure for which is laid down in OP5.4.1.2) shall be initiated by EGAT issuing the relevant Instructions under SDP2. On the issuing of the first Instruction of a test, EGAT will inform the Generator that this Instruction is for a test. On issuing the final Instruction of a test (or with the first Instruction if the test requires only one Instruction), EGAT will inform the Generator that this Instruction is the last one in the test and will also inform the Generator of the time at which the monitoring of the performance of the Generating Unit will cease for the purposes of the test.

OP5.4.1.2 Testing of the automatic response to variations in System Frequency of a Generating Unit will be carried out during the normal operation of the System and no special Instructions will be issued.

OP5.4.1.3 A test will only be valid if it requires the Generating Unit to perform a duty or duties which are within its capabilities as given by its Operating Characteristics which were current at the time of the issue of the first Instruction of the test (or, in the case of a test of automatic frequency response, at the time the Generator was informed that a test would be carried out). If, after receiving the first Instruction of a test (or, in the case of a test of automatic frequency response, after the Generator was informed that a test would be carried out), a Generator declares revised values of the Operating Characteristics which were to be tested, and such revision reduces the capability of the Generating Unit to perform any relevant duty, then EGAT may assume that the test has been, or will be, failed.

OP5.4.1.4 Any test will be of up to 120 minutes duration. During the monitoring of the test, EGAT will keep a record the performance of the Generating Unit in such a way as to allow independent verification of the results. In addition, where the response of the Generating Unit requires System Frequency or System Voltage to be examined, EGAT will keep records of these values for the period of the test.

OP5.4.1.5 If, through its testing of a Generating Unit's performance, EGAT determines that, in its reasonable opinion, the Generating Unit is failing to meet any of the Operating Characteristics which are being tested then

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EGAT shall notify the relevant Generator giving details of the testing which has been carried out and the results of this testing.

OP5.4.1.6 Upon receipt of the notification issued under OP5.4.1.5, the Generator will, as soon as possible, provide EGAT, in writing, with:

- (a) an explanation of the failure;
- (b) revised values of the relevant Operating Characteristics which it proposes to include in its Declarations made under SDP1; and
- (c) its proposals to rectify the problem.

OP5.4.1.7 EGAT and the Generator will discuss the Generator's submission made under OP5.4.1.6 and will try to reach agreement about the Generator's proposals and the revised values of the Operating Characteristics. If such agreement is reached then the Generator will declare such revised value or values (under SDP1) until such time as the problem causing the revision to the Operating Characteristic has been solved and the Generator has provided such evidence to EGAT as EGAT may reasonably require (which may include a re-test of the Generating Unit). If agreement cannot be reached within 3 Business Days then EGAT shall initiate a re-test and both Parties will abide by the results of this re-test.

OP5.4.1.8 If, as the results of a test (or re-test) initiated by EGAT, the Operating Characteristics of a Generating Unit must be revised pursuant to OP5.4.1.7, EGAT shall be entitled to take the following actions:

- (a) if the test was called other than as the result of monitoring or the failure of the Generating Unit in a previous test (and was not a re-test caused by a failure to agree revised Operating Characteristics), then EGAT may assume that the Operating Characteristics which require revision will take the revised values (which were agreed under OP5.4.1.7) from the issue time of the first Instruction of the test would be carried out;
- (b) if the test was called as the result of monitoring of the Generating Unit, then EGAT may assume that the Operating Characteristics which require revision will take the revised value(s) from the time of notification to the Generator under OP5.3.2;
- (c) if the test was a re-test caused by a failure to agree revised Operating Characteristics, then EGAT may assume that the Operating Characteristics which require revision will take the revised values (which were agreed under OP5.4.1.7) from the time which would have applied if the results of the original test (of which this is the re-test) had been accepted.

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- OP5.4.1.9 Following a test (or re-test) initiated by the Generator, the values of the Operating Characteristics of a Generating Unit agreed under OP5.4.1.7, shall be assumed by EGAT to have applied from the time which the Generator had notified EGAT under OP5.4.3 that it was ready for the Generating Unit to be tested.
- OP5.4.2 EGAT's right to initiate tests
- OP5.4.2.1 EGAT may test a Generating Unit at any time and that test may be of any one or a combination of Operating Characteristics, provided that EGAT does not test any single Generating Unit more than three times in any one calendar year except in the following circumstances:
- (a) the results of the test showed that the value of one or more Operating Characteristics (whether or not the test was specifically designed to test this Operating Characteristic) was not as declared by the Generator; or
  - (b) conditions on the System were such that the test had to be abandoned and it is reasonable to assume that EGAT could not have predicted that such conditions would occur (in which case the test is declared void); or
  - (c) the test is called as a result of monitoring of the Generating Unit performance and EGAT notified the Generator, under OP5.3.2 that it believes that one or more of the relevant Generating Unit Operating Characteristics needs revision and EGAT and the Generator fail to reach agreement, under OP5.3.3, of the appropriate value of the Operating Characteristic; or
  - (d) the test of the Generating Unit is called in response to a request, under OP5.4.3, for a test, from the Generator who owns (or operates) this Generating Unit.
- OP5.4.3 Generator's right to request tests
- OP5.4.3.1 A Generator may only request a test of a Generating Unit in the following circumstances:
- (a) the Generating Unit for which the test is requested is owned (or operated by) the Generator; and
  - (b) (i) the Operating Characteristics of the Generating Unit have been revised following a problem in respect of the Generating Unit, the problem has now been solved and the Generator wishes to obtain proof of the improved Operating Characteristics; or

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- (ii) the test is a commissioning test of the Generating Unit following its first construction or any major maintenance, alteration, modification or re-construction.

OP5.4.3.2 A Generator will, subject to the provisions of OP5.4.3.1, request a test of a Generating Unit by submitting a written test request to EGAT, containing the following information:

- (a) the date of submission of the request for test;
- (b) the earliest date at which the test can commence (which date shall be no earlier than 2 Business Days later than the date of submission of the test request);
- (c) the identification of the Generating Unit;
- (d) the Operating Characteristics which are to be tested; and
- (e) the values of the Operating Characteristics which the test is expected to verify.

OP5.4.3.3 EGAT will make all reasonable efforts to schedule the test within 5 Business Days after the earliest date given by the Generator on which the test can start. In the event that EGAT is unable to schedule the test within this time period, both EGAT and the Generator will assume that the Generating Unit has been tested and that this test has verified that the values of the Operating Characteristics given in the test request are correct.

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**OP6 – OPERATIONAL LIAISON****OP6.1 INTRODUCTION**

OP6.1.1 Operating Procedure OP6 sets out:

- (a) the requirements for the exchange of information concerning Operations which may have an Operational Effect and/or Incidents; and
- (b) the rules for the investigation of a Significant Incident.

OP6.1.2 The terms below have the following meanings:

- (a) an Operation is a scheduled or planned action relating to the operation of any part of the System;
- (b) an Operational Effect is an effect on the operation of any part of the System which may require EGAT or any other User to operate in a non-standard way in order to minimise the chance of the Operating Standards being breached;
- (c) an Incident is an unplanned occurrence on, or related to, the System which has caused, or could have caused, a breach of the Operating Standards or which has caused injury to any individual; and
- (d) a Significant Incident is an Incident which in EGAT's reasonable opinion has caused, or could have caused, a System Emergency or serious injury to an individual.

**OP6.2 OBJECTIVES**

OP6.2.1 The objectives of this OP6 are to define procedures so that:

- (a) the implications of Operations which may have an Operational Effect can be considered in advance and the appropriate actions taken; and
- (b) Incidents and the reason for their occurrence can be identified and, where necessary, investigated.

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**OP6.3 PROCEDURES RELATING TO OPERATIONS**

- OP6.3.1** In the case of an Operation on any part of the Transmission System which has had or may have an Operational Effect, EGAT will notify any Users whose operation may, in EGAT's reasonable opinion, be affected by the Operation, as soon as is reasonably practical (and, in any event, before the Operation is initiated, unless such delay would itself increase the risk of an Operational Effect or an Incident) of the Operation in accordance with the provisions of OP6.3.5.
- OP6.3.2** In the case of an Operation on any Power Plant or External Interconnector which has had or may have an Operational Effect, the relevant Generator or, as the case may be, Externally Interconnected Party will notify EGAT, as soon as is reasonably practical (and, in any event, before the Operation is initiated, unless such delay would itself increase the risk of an Operational Effect or an Incident) of the Operation in accordance with the provisions of OP6.3.5.
- OP6.3.3** In the case of an Operation notified to EGAT under the provisions of this OP6.3.2, EGAT shall itself notify any Users whose operation may, in EGAT's reasonable opinion, be affected by the Operation, as soon as is reasonably practical, of the Operation in accordance with the provisions of OP6.3.5.
- OP6.3.4** On receipt of any notification of an Operation issued pursuant to this OP6.3, and subject to the provisions of OP6.3.6, any recipient may contact the User issuing the notification to seek clarification and that User, in so far as it is able and the request for information from the recipient is reasonably required for the recipient to decide upon what action it could take, will:
- (a) provide the answers required; and
  - (b) circulate copies of the questions and answers to all recipients of the notification.
- OP6.3.5** A notification and any response to any questions asked under OP6.3.4 will, subject to the provisions of OP6.3.6:
- (a) contain the name, position and organization of the individual issuing the notification and the date and time of issue;
  - (b) be of sufficient detail to enable the recipient of the notification reasonably to consider and assess the risks to its own operation and to put in place any reasonable plans which may be applicable to reduce this risk.

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OP6.3.6 Where EGAT is notified by a User, under OP6.3.2, of an Operation and, under OP6.3.3, notifies other Users of this Operation, EGAT will include the name and organization of the individual reporting the Operation on behalf of the User. Recipients of such a notification may seek clarification as if this individual had issued the notification to other Users.

OP6.3.7 Examples of Operations which are required to be reported under this OP6 include, but are not limited to, the following:

- (a) the withdrawal of any item of Power Plant equipment from service for Outage or Testing (other than as approved by EGAT pursuant to the provisions of OP2 or OP5), which may reduce the Reliability of the System; or
- (b) the withdrawal of any item of Transmission System or External Interconnector equipment from service for Outage or Testing (other than as approved by EGAT pursuant to the provisions of OP2 or OP5), which may reduce the Reliability of the System; or
- (c) the carrying out of Tests on any Power Plant or External Interconnector equipment even when this does not require the removal from service of this equipment; or
- (d) the operation of any circuit breaker or Isolating Device or Earthing Device, other than under Instruction from EGAT; or
- (e) any other instance of non-standard operation which the User has to instigate, other than when it is so Instructed by EGAT.

#### OP6.4 PROCEDURES RELATING TO INCIDENTS

OP6.4.1 Initial reporting of an Incident

OP6.4.1.1 In the case of an Incident on any part of the Transmission System which has had or may have had an Operational Effect, including an Incident which was itself caused by an Incident on a Power Plant or External Interconnector, EGAT will notify any Users whose operation, in EGAT's reasonable opinion, had been or may have been affected by the Incident, as soon as is reasonably practical, in accordance with the provisions of OP6.4.1.4.

OP6.4.1.2 In the case of an Incident on any Power Plant or External Interconnector which has had or may have had an Operational Effect, the relevant Generator or, as the case may be, Externally Interconnected Party will notify EGAT, as soon as is reasonably practical, of the Incident in accordance with the provisions of OP6.4.1.4.

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- OP6.4.1.3 On receipt of any report of an Incident issued pursuant to this OP6.4.1, any recipient may contact the User issuing the report to seek clarification and that User, in so far as it is able and the request for information from the recipient is reasonably required for the recipient to assess the implications and risks arising from the Incident, will provide the answers required.
- OP6.4.1.4 The report of an Incident and the answers to any questions arising from that report may be given orally or in writing and must:
- (a) contain the name, position and organization of the individual issuing the report and, in the case of a written report, the date and time of issue;
  - (b) where an Incident has caused injury to any individual, details of the injuries caused;
  - (c) include, so far as this is possible, sufficient detail to allow the recipient to assess the operational implications and risk arising from the Incident.
- OP6.4.1.5 When a report of an Incident is given orally:
- (a) it will be dictated by the sender to the recipient; and,
  - (b) unless the nature of the Incident requires immediate action to be taken, the recipient will record and repeat each phrase as it is received and on completion of the report the recipient shall read back the complete report to the sender who shall confirm that it is accurate; or
  - (c) if the requirement to take immediate action has meant that the confirmation of the report required by OP6.4.1.5 (b) has not been obtained at the time the report was given, such confirmation must be sought from the sender by the recipient as soon as is reasonably possible.
- OP6.4.2 Significant Incident Reporting
- OP6.4.2.1 If, in EGAT's reasonable opinion, the Incident has caused, or could have caused, an Operational Effect, or has caused, or could have caused, serious injury to an individual, then EGAT may classify the Incident as a Significant Incident. In such case EGAT may seek additional written reports from the User reporting the Incident or, where the primary cause of the Incident was within the Transmission System, EGAT will prepare such a report itself. Such a report will contain details of the initial report given of the Incident and such other information as EGAT reasonably considers is necessary and has so informed the producer of the report.

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- OP6.4.2.2 A report produced pursuant to OP6.4.2.1 shall be classed as a Significant Incident Report and shall be produced and issued to EGAT as soon as is reasonably practical. EGAT will issue copies of any such report to any User who, in EGAT's reasonable opinion, has been, or could have been, affected by the Incident.
- OP6.4.3 Significant Incident meeting
- OP6.4.3.1 Where a Significant Incident Report has been produced and issued, the issuer or any recipient of that report may, if it believes that it is necessary, request EGAT, in writing, to convene a meeting of all interested parties to discuss the Incident (which request EGAT shall not unreasonably refuse).
- OP6.4.3.2 Where there have been a series of Significant Incidents and the party requesting the meeting under OP6.4.3.1 believes that they may be connected, that party may request that the meeting considers all such Significant Incidents.
- OP6.4.3.3 Where it has been agreed that a meeting will be convened to discuss one or more Significant Incidents, EGAT will convene such a meeting as soon as reasonably practicable. All affected Users will be invited to send a representative to the meeting, which EGAT will chair. The procedures and rules of conduct of the meeting will be decided by the attendees.
- OP6.5 CONFIDENTIALITY
- OP6.5.1 Users shall treat all information received under this OP6 as confidential and shall only release this information to third parties:
- (a) where required to do so under any provision of the Grid Code;
  - (b) where:
    - (i) a contract between the User and the third party requires such disclosure; and
    - (ii) the third party is connected to the System only via some facility owned by the User and which is itself connected to, or is part of, the System; and
    - (iii) had the third party been connected directly to the System, it would have received the information in its own right.
  - (c) where required to do so under any law or statute;

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- (d) where the information has entered the public domain other than by this User breaching the conditions of this OP6.5.1.

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**OP7 – SAFETY LIAISON****OP7.1 INTRODUCTION**

OP7.1.1 Operating Procedure OP7 specifies the procedures to be used by EGAT and Users for the establishment and maintenance of switching and clearance procedures to ensure that work on HV Apparatus in EGAT's or a User's Systems can be carried out safely. It applies only when work and/or testing (other than System Tests covered by OP5) is to be carried out and where the safety of personnel or plant requires EGAT and a User (or Users) to liaise.

OP7.1.2 This OP7 does not define the safety rules to be adopted by EGAT or any User but simply lays down the preparation of procedures which will govern the interface between them. In particular it lays down the rules for agreeing the safety procedures (the Local Safety Procedures) which will be adopted on either side of a Connection Point between EGAT and any User.

OP7.1.3 Where the provisions of this OP7 require a Party to approve the Local Safety Procedures of another Party, such approval does not imply that the approving Party takes any responsibility for the adequacy or otherwise of the Local Safety Procedure. The approval in such case only implies that there is nothing in the Local Safety Procedures that negates or frustrates any provision of the Local Safety Procedures of the approving Party for the relevant Connection Point.

**OP7.2 OBJECTIVE**

The objective of this OP7 is to ensure that the safety procedures adopted on either side of a Connection Point work together in such a way as to ensure the safety of personnel and/or plant at any time that work and/or testing is carried out at or near the Connection Point.

**OP7.3 CO-ORDINATION OF SAFETY PROCEDURES****OP7.3.1 Approval of Local Safety Procedures**

OP7.3.1.1 Prior to the energising of a new Connection Point (or, for a Connection Point which has been energised before the procedure laid down in this OP7 has been adopted, as soon as reasonably practicable), EGAT and the relevant User will each supply the other with a copy of the Local Safety

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Procedures which it intends to adopt on its side of the Connection Point for approval by the other party.

OP7.3.1.2 The Party from whom approval is sought will, within 7 Business Days of receipt of the Local Safety Procedure, send written comments to the issuing Party giving:

- (a) its approval of the Local Safety Procedure; or
- (b) its reasons for refusing to give approval and the changes which it would wish to see to enable it to grant approval.

OP7.3.1.3 If the Party from whom approval is sought requires more stringent Isolation and/or Earthing provisions then, to the extent that these provisions are not unreasonable, then the other Party will make such changes to its Local Safety Procedures as soon as is reasonably practicable.

OP7.3.1.4 If, subsequent to the approval of any Local Safety Procedure, the issuing Party wishes to change any provision of the procedure, it will prepare a version of the procedure showing the original text and clearly indicating the changes required to this text and will seek approval of this procedure as if this procedure had not previously been approved. Subject to the provisions of OP7.3.1.5 the revised procedure shall not be implemented until the necessary approvals have been received.

OP7.3.1.5 If an approved Local Safety Procedure has been found to be unsound, revisions to this procedure (only to the extent that these are required to ensure the safety of personnel or plant) may be implemented immediately, subject only to the Safety Co-ordinators of the other Party or Parties having been informed of these changes and having confirmed that the changes do not increase the risk to their own personnel or plant and are understood.

#### OP7.4 SAFETY CO-ORDINATORS

OP7.4.1 Prior to the energising of a new Connection Point (or, for a Connection Point which has been energised before the procedure laid down in this OP7 has been adopted, as soon as reasonably practicable), EGAT and the relevant User will, in respect of this Connection Point, each appoint an individual to act as Safety Co-ordinator and a second individual to act as Safety Co-ordinator at any time that the first named individual is unavailable.

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- OP7.4.2 EGAT and the relevant User will each inform the other, in writing and without delay, of the identity of the individuals appointed by them as Safety Co-ordinators. In the event of an intention to replace the individual appointed as Safety Co-ordinator the other Party will be notified of identity of the new Safety Co-ordinator without delay.
- OP7.4.3 The Safety Co-ordinators will be responsible for co-ordination of all matters concerning safety across the Connection Point, including (but not limited to) the approval of Local Safety Procedures. A Safety Co-ordinator may be responsible for more than one Connection Point site.
- OP7.5 ISOLATION AND EARTHING
- OP7.5.1 Without prejudice to the need to prepare and agree Local Safety Procedures for use at each Connection Point site, it would be expected that the Isolation and Earthing principles no less stringent than those outlined in OP7.5.2 below will be adopted.
- OP7.5.2 Isolation and Earthing principles
- OP7.5.2.1 (a) Where Isolation is achieved by means of an Isolation Device, the isolating position will be maintained in such a way as to minimise the risk of inadvertent, accidental or unauthorised operation and that when put in this position, a notice or "tag" to this effect will be attached.
- (b) Clearance to work on any Apparatus which requires this Isolation to be achieved will only be issued when the procedure in OP7.5.2.1 (a) has been completed by Safety-Coordinator in final.
- OP7.5.2.2 (a) Where Earthing is achieved by means of an Earthing Device, the Earthing position will be maintained in such a way as to minimise the risk of inadvertent, accidental or unauthorised operation and that when put in this position, a notice or "tag" to this effect will be attached.
- (b) Clearance to work on any Apparatus which requires this Earthing to be achieved will only be issued when the procedure in OP7.5.2.2 (a) has been completed by Safety-Coordinator in final.

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**OP8 – CONTINGENCY PLANNING**

- OP8.1 INTRODUCTION
- OP8.1.1 Operating Procedure OP8 defines the Procedures to be followed in the event of an exceptionally serious breakdown on the System. It covers:
- (a) priority Load Shedding and Load restoration; and
  - (b) Generator Shedding;
  - (c) Black Start.
- OP8.1.2 The Procedures to be followed by Generators in support of System Frequency are covered in SDP3.
- OP8.1.2 System Emergency Action Sheets
- OP8.1.2.1 Whilst this OP8 lays down the basic rules for Load Shedding, Generator Shedding and Black Start, additional details are given in the appropriate System Emergency Action Sheets which shall be issued from time to time by EGAT to Authorised Operators.
- OP8.1.2.2 The following details are set out in the appropriate System Emergency Action Sheets:
- (a) details of all Load Shedding Blocks;
  - (b) relevant telephone numbers and means of communication between the relevant Parties (as laid down in OP6);
  - (c) action to be taken following a loss of communications (as laid down in OP6);
  - (d) Generation and special Procedures where appropriate.
- OP8.2 OBJECTIVES
- OP8.2.1 The objectives of this OP8 are:
- (a) to ensure that rules are established which allow independent action by appropriate Authorised Operators to avoid a System Blackout; and

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- (b) to describe the Procedures to be followed to restore the System following a Under Frequency Emergency, Partial Blackout or Total Blackout;
- (c) to ensure the provision of protection system to avoid cascade tripping.

### OP8.3 SYSTEM EMERGENCIES

- OP8.3.1 A Under Frequency Emergency shall occur when the System Frequency falls non-transiently to or below 49.25Hz.
- OP8.3.2 A Partial Blackout occurs when a section of the System becomes disconnected from the remainder of the System, forming a Power Island.
- OP8.3.3 A Total Blackout occurs when all Generation has ceased and there is no electricity supply from External Interconnections.
- OP8.3.4 During a Under Frequency Emergency, Partial Blackout or Total Blackout and the period following such an occurrence during the restoration of the System, the System may be operated outside Normal System Frequency and Normal System Voltage and the Scheduling and Dispatch of Generating Units in accordance with the Merit Order may cease.

### OP8.4 LOAD SHEDDING

#### OP8.4.1 Load Shedding Blocks

OP8.4.1.1 Arrangements shall be made whereby, in a System Emergency, Load can be shed in Load Shedding Blocks. The Load Shedding Blocks for each individual location shall be allocated, where appropriate, between Under Frequency Automatic Load Shedding and Manual Load Shedding.

OP8.4.1.2 Under Frequency Automatic Load Shedding shall be effected by the operation of Under Frequency Relays, installed at appropriate points throughout the System. The settings of the Under Frequency Relays and their locations shall be detailed on the appropriate System Emergency Action Sheets.

OP8.4.1.3 The settings on the Under Frequency Relays shall allow for Load Shedding in steps at the following Frequencies and according to EGAT's Instruction :

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- |  |        |        |
|--|--------|--------|
|  | Step 1 | 49.0Hz |
|  | Step 2 | 48.8Hz |
|  | Step 3 | 48.6Hz |
|  | Step 4 | 48.3Hz |
|  | Step 5 | 47.9Hz |
- OP8.4.1.4 The instructions to be followed to effect Manual Load Shedding shall be detailed on the appropriate System Emergency Action Sheets.
- OP8.4.1.5 In certain circumstances Load Shedding by stages, normally Instructed by EGAT may not be adequate for relieving emergency System conditions. In these circumstances, EGAT may Instruct Load Shedding at any Frequency for this purpose.
- OP8.4.2 Load Restoration
- OP8.4.2.1 As soon as Frequency has risen to the value specified in the appropriate System Emergency Action Sheet, the Dispatcher shall start restoring Load.
- OP8.5 AUTOMATIC GENERATION SHEDDING
- OP8.5.1 Normally, EGAT uses N-1 design criteria for planning and operation. In some circumstances which may cause cascade tripping on generating units, transmission lines or even system separation. To prevent the serious problem after N-2 incident EGAT preserve the right to install the protection system such as Automatic Generation Shedding if it necessary.
- OP8.6 BLACK START
- OP8.6.1 Certain Power Plants are registered under Connection Conditions CC as having the capability of starting without any external electricity supply ("Black Start Capability").
- OP8.6.2 In the event of a Total or Partial Blackout Generators with Power Plants registered as having a Black Start Capability may be Instructed by EGAT to perform a Black Start. In giving this Instruction, EGAT may give to the Generator such other Instructions as, in its reasonable opinion, are necessary to accomplish a restoration of the System. In such a case, a Generator may not refuse such Instructions, even when they require operation of the Generating Unit outside of its current Operating Characteristics, other than for reasons of safety, of either personnel or Plant.
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OP8.6.3

Upon receiving an Instruction to perform a Black Start, the Generator shall initiate the Start-Up as soon as possible and shall inform EGAT when this has been accomplished. Following such confirmation EGAT will endeavour to stabilise the operation of the Generating Unit by the establishment of appropriate loads and the Start-Up and Synchronisation of other Generating Units. If during this restoration period any Generator experiences difficulties in maintaining the operation of any of its Generating Units within safe operating limits, it shall inform EGAT of this fact without delay and EGAT will, where possible, take such actions as are necessary to alleviate the problem.

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**SDP1 – GENERATION SCHEDULING****SDP1.1 INTRODUCTION**

SDP1.1.1 Scheduling and Dispatch Procedure SDP1 set out the Procedure for the production of the Weekly Operating Program and the Daily Generation Program. It covers:

- (a) the submission to EGAT by the Generators of an Availability Declaration and information on their current Operating Characteristics;
- (b) the submission to EGAT by the Externally Interconnected Parties of information concerning the available Capacity and Operating Characteristics of the External Interconnectors;
- (c) the agreement between EGAT and the Externally Interconnected Parties concerning Imports and Exports across the External Interconnectors; and
- (d) the production and issue of the Weekly Operating Program and the Daily Generation Program by EGAT.

SDP1.1.2 Where, in accordance with SDP1, information must be submitted or issued on a particular day and that day is not a Business Day, the information shall be submitted or issued on the last Business Day before the due day.

SDP1.1.3 In this SDP1, other than in Appendix 1, the term Operating Characteristics includes all Operating Characteristics other than Capacity (which is in all cases treated separately).

SDP1.1.4 The obligation in this SDP1 to take account of irrigation requirements and reservoir levels refers only to such matters within Thailand.

**SDP1.2 OBJECTIVE**

SDP1.2.1 This Procedure SDP1 is intended to enable EGAT to ensure that it receives sufficient information, in a timely manner, to allow for the production of optimal Operating Programs for 1 week ahead and 1 day ahead, taking account of:

- (a) Generating Unit availabilities and Operating Characteristics;
- (b) Imports across External Interconnectors;

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- (c) Demand Forecasts;
- (d) System economics;
- (e) Pumped Storage Plant pumping conditions. Pumped Storage Plant means the pumping programme required for the Pumped Storage plants.
- (f) Irrigation requirements, environmental restrictions and fuel supply restrictions; and
- (g) any constraints on the Transmission System.

### SDP1.3 WEEKLY OPERATING PROGRAM

SDP1.3.1 The Weekly Operating Program is prepared on a calendar week basis and is based upon the relevant week of the Monthly Operating Program. It will show the following:

- (a) a statement of expected daily Power Plant production, Imports and Demand;
- (b) a Generation, External Interconnector and Transmission System Outage program, prepared in accordance with OP2; and
- (c) daily reservoir operation, including Pumped Storage Plant pumping conditions, and irrigation requirements.

SDP1.3.2 The Weekly Operating Program shall be prepared by EGAT in accordance with the rules laid down below.

SDP1.3.3 By 1000 hours on each Wednesday, each Generator shall submit to EGAT by facsimile (or by such other means as have been agreed by EGAT) the following information, in respect of each of their Generating Units and for the next following calendar week, the following information:

- (a) an Availability Declaration stating the Capacity at which the Generating Unit may be operated in any time period (given in a whole number of MW)
- (b) for any Generating Unit which has been declared as Available and for which any Operating Characteristic (as listed in Appendix 1 to this SDP1) has a value which is different from the value of the equivalent Registered Operating Characteristic or has a value which is different from that declared by the Generator in its previous

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Declaration made under this SDP1.3.3, the Generator shall give the following:

- (i) identification of the Operating Characteristic (as shown in Appendix 1 to this SDP1);
  - (ii) the new value of the Operating Characteristic;
  - (iii) the time from when this new value will apply; and
  - (iv) the time for which the new value is expected to apply;
- (c) In the event of no Declaration being made in respect of an Operating Characteristic, EGAT shall assume that the last valid Declaration for this Operating Characteristic shall apply(d) any restrictions on operation which may arise from environmental considerations.

SDP1.3.4 By 1000 hours on each Wednesday, each Externally Interconnected Party shall submit to EGAT by facsimile (or by such other means as have been agreed by EGAT) the following information, in respect of each of their External Interconnectors and for the next following calendar week, the following information:

- (a) requested, expected or agreed (as appropriate) Imports and Exports;
- (b) a Declaration stating the Capacity available at any time; and
- (c) In the event of no Declaration having been made in respect of an External Interconnector, EGAT shall make an estimate of the values and restrictions which will apply;
- (d) any restrictions on operation which may arise from environmental or other considerations.

SDP1.3.5 By 1600 hours on the Friday or the last Business Day of the week before the start of the week to which the Weekly Operating Program will refer, EGAT will:

- (a) obtain the relevant Demand Forecasts in accordance with OP1;
- (b) produce a draft of the expected Generation, External Interconnector and Transmission Maintenance Schedule for the week in accordance with OP2;
- (c) determine irrigation demand, in respect of Hydro Power Plants for each day of the week from historic and climatic data and through discussions with the Royal Irrigation Department;

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- (d) optimize, as far as is practicable, the parallel operation of Hydro and Thermal Power Plants and Imports and Pumped Storage Plant pumping requirements, taking account of:
  - (i) irrigation requirements;
  - (ii) Generating Unit Availability Declarations and Operating Characteristics;
  - (iii) Operating Reserve requirements
  - (iv) fuel and environmental restrictions; and
  - (v) information from the Externally Interconnected Parties;
- (e) establish a Merit Order of all Generating Units as defined in SDP1.6 below.
- (f) determine the total System costs, including the costs of Generation and Imports, the costs of restrictions resulting from Generation, External Interconnector and Transmission System Outages and the costs of Out-of-Merit Operation of Thermal Power Plants and the costs of pumping for Pumped Storage Plant;
- (g) Subject to the provisions of SDP1.3.6, prepare the Weekly Operating Program and issue it internally within EGAT and to each Generator and Externally Interconnected Party.

SDP1.3.6 In the event that, in EGAT's reasonable opinion, the flexibility of operation of the Generating Units (as demonstrated by their then current Declared Operating Characteristics) is such that the Scheduling of sufficient Operating Reserve is not possible, then EGAT may take the actions envisaged under SDP3.3.3.5 and the results of such actions will be reflected in the Weekly Operating Program.

#### SDP1.4 DAILY GENERATION PROGRAM

SDP1.4.1 The Daily Generation Program is prepared on a daily basis and is based upon the relevant day of the Weekly Operating Program. It will show the following:

- (a) a statement of hourly plant production and Demand;
- (b) a Generation, External Interconnector and Transmission System Outage program, prepared in accordance with OP2; and

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- (c) reservoir operation, including Pumped Storage Plant pumping conditions, and irrigation requirements.

SDP1.4.2 The Daily Generation Program shall be prepared by EGAT in accordance with the rules laid down below.

SDP1.4.3 By 1200 hours on each Business Day, each Generator shall submit to EGAT by facsimile (or by such other means as have been agreed by EGAT) the following information, in respect of each of their Generating Units and for the next following day. If the following day(s) is not a Business Day(s), the Generator shall submit the information from the following day to the next Business Day:

- (a) an availability Declaration stating the Capacity at which the Generating Unit may be operated in any time period (given in a whole number of MW)
- (b) for any Generating Unit which has been declared as Available and for which any Operating Characteristic (as listed in Appendix 1 to this SDP1) or schedule in PPA has a value which is different from the value of the equivalent Registered Operating Characteristic or has a value which is different from that declared by the Generator in its previous Declaration made under this SDP1.4.3, (save that no revisions to any Economic Operating Characteristic will be accepted) the Generator shall give the following:
- (i) identification of the Operating Characteristic (as shown in Appendix 1 to this SDP1 or schedule in PPA);
- (ii) the new value of the Operating Characteristic;
- (iii) the time from when this new value will apply; and
- (iv) the time for which the new value is expected to apply;
- (v) the cause of decreasing Availability
- (c) In the event of no Declaration being made in respect of an Operating Characteristic, EGAT shall assume that the last valid Declaration for this Operating Characteristic shall apply
- (d) any restrictions on operation which may arise from environmental considerations.

SDP1.4.4 By 1200 hours on each day, each Externally Interconnected Party shall submit to EGAT by facsimile (or by such other means as have been agreed by EGAT) in respect of each of their External Interconnectors and for the

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next following day, the following information (save that no revisions to any Economic Operating Characteristic will be accepted):

- (a) requested, expected or agreed (as appropriate) Imports and Exports;
- (b) a Declaration stating the Capacity available at any time; and
- (c) In the event of no Declaration having been made in respect of an External Interconnector, EGAT shall make an estimate of the values and restrictions which will apply;
- (d) any restrictions on operation which may arise from environmental or other considerations.

## SDP1.4.5

By 1700 hours on the day before the start of the day to which the Daily Generation Program will refer, EGAT will:

- (a) obtain the relevant Demand Forecasts in accordance with OP1;
- (b) produce a draft of the expected Generation, External Interconnector and Transmission Maintenance Schedule for the day in accordance with OP2;
- (c) determine irrigation demand, in respect of Hydro Power Plants located within Thailand, for each hour of the day from historic and climatic data and through discussions with the Ministry of Agriculture and the Royal Irrigation Department;
- (d) optimize, as far as is practicable, the parallel operation of Hydro and Thermal Power Plants and Imports and Pumped Storage Plant pumping requirements, taking account of:
  - (i) irrigation requirements;
  - (ii) Generating Unit Availability and Operating Characteristics Declarations;
  - (iii) Operating Reserve requirements
  - (iv) fuel and environmental restrictions; and
  - (v) information from the Externally Interconnected Parties;
- (e) establish a Merit Order of all Generating Units as defined in SDP1.6 below.

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- (f) Subject to the provisions of SDP1.4.6, prepare the Daily Operating Program and issue it internally within EGAT and applicable sections to each Generator and Externally Interconnected Party.

SDP1.4.6 In the event that, in EGAT's reasonable opinion, the flexibility of operation of the Generating Units (as demonstrated by their then current Declared Operating Characteristics) is such that the Scheduling of sufficient Operating Reserve is not possible, then EGAT may take the actions envisaged under SDP3.3.3.5 and the results of such actions will be reflected in the Daily Operating Program.

SDP1.5 REVISIONS TO AVAILABILITY AND OPERATING CHARACTERISTICS

SDP1.5.1 If at any time a Generator or Externally Interconnected Party finds that, in respect of any of its Generating Units or, as the case may be, External Interconnectors, any part of the last Declaration made under SDP1.4.3 or SDP 1.4.4 or this SDP1.5.1 is no longer valid, he shall inform EGATCC the requirement for a Short Notice Outage Reduction in Operation Characteristics with the revised value or values (and the times for which they shall apply, without delay, by Control Telephony or such other means as EGAT might from time to time agree, and shall confirm the same in writing within [2] hour (save that no revisions to any Economic Operating Characteristic will be accepted).

SDP1.6 MERIT ORDER

SDP1.6.1 Thermal Power Plant Merit Order

SDP1.6.1.1 EGAT will calculate a position in the Thermal Power Plant Merit Order for each Thermal Generating Unit. A Generating Unit's position in the Merit Order is based upon its operating cost and incremental cost per MWh of electricity sent out, as determined in accordance with SDP1.6.1.3 and SDP1.6.1.4 and the effect of transmission losses from that unit to the load centre.

SDP1.6.1.2 It is important that the Merit Order be updated frequently to take account of changes to the value of the Economic Operating Characteristics submitted in respect of the Generating Units pursuant to this SPD1. EGAT will, therefore, update the Merit Order as frequently as, in its reasonable opinion, is required and, in any case, as part of the process of preparing each Weekly Operating Program.

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SDP1.6.1.3 Where in respect of a Generating Unit the Economic Operating Characteristics are submitted in terms of fuel type and energy requirements (as laid down in SDP1A1.2.2.3) the operating cost (per MWh sent out) of each Generating Unit will be calculated as follows (each value being that related to the Generating Unit in question):

Let:

- (a) The cost of fuel, in Baht/unit quantity, = F;
- (b) The calorific value of the fuel, in BTU/unit quantity = C;
- (c) The Heat Rate Curve of the Generating Unit at any load, in BTU/hour = H;
- (d) The operating capability of the Unit, in MW = M;

Operating cost (Baht per MWh) =  $((F/C) * H)/M$  at that load

SPD1.6.1.4 Where, in respect of a Generating Unit, the Economic Operating Characteristics are submitted in terms of fuel type and energy requirement (as laid down in SPD1A1.2.2.4), the operating cost (per MWh sent out) of each Generating Unit will be calculated as follows (each value being that related to the Generating Unit in question):

Let:

- (a) The No-load price, in Baht/hour, = N;
- (b) The incremental price, in Baht/MWh, = P;
- (c) The Capacity, in MW, = C;

Operating cost (in Baht/MWh) =  $(N/C) + P$

SDP1.6.2 Hydro Power Plant Merit Order

SDP1.6.2.1 The efficiency of a Hydro turbine is affected by, amongst other things, the Turbine Head and the Active and Reactive Power output. In the setting of the Hydro Power Plant Merit Order EGAT will prepare, for each Hydro Power Plant and, as appropriate, for each Hydro Generating Unit within the Power Plant, a loading chart, a reservoir characteristic curve and a discharge curve. These will be used to show the relationship between efficiency and output over a range of Turbine Head values which can occur due to fluctuations in water storage and tailrace levels. A further factor to be taken account of in setting the Hydro Power Plant Merit Order is the downstream irrigation requirements.

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**SDP1 – APPENDIX 1****SDP1A1.1 INTRODUCTION**

SDP1A1.1.1 Each Generator will make Declarations in accordance with this SDP1 of the values of the Operating Characteristics listed in SDP1A1.2 in respect of each of its Generating Units (which value shall reflect the true operating characteristics of the Generating Unit, determined in accordance with Prudent Practice).

SDP1A1.1.2 In respect of any Hydro Generating Unit, warmth-varying values of Operating Characteristics have no meaning and only the "cold" value of the Operating Characteristic shall be given.

SDP1A1.1.3 In respect of Pumped Storage Plants, the capability of pumping will be classed as an Operating Characteristic and, as required the term Generating Unit will be applied, to the extent required, to a pump in such a plant.

SDP1A1.1.4 In respect of any Thermal Generating Unit the Generator shall notify EGAT of the definitions of Warmth Condition which shall apply to all Warmth-Varying Operating Characteristics and which were submitted by the Generator pursuant to the Connection Conditions, CC. The notification of these Warmth Conditions will be as laid down in SDP1A1.2.1 and may only be changed with EGAT's written permission.

SDP1A1.1.5 Each Externally Interconnected Party will make Declarations in accordance with this SDP1 of the capability of each of its External Interconnectors to Import or Export electricity or provide Reserve (which values shall reflect the true operating characteristics of the External Interconnector, determined in accordance with Prudent Practice), the expected or required Imports and Exports and the Import price of electricity as given in SDP1A1.3.

**SDP1A1.2 GENERATOR DECLARATIONS****SDP1A1.2.1 Warmth Conditions****SDP1A1.2.1.1 "cold" and "hot" conditions**

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Condition	Time since last De-Synchronized
cold	more than [ ] hours
hot	less than [ ] hours

SDP1A1.2.1.2 "Warm" condition

Warm = not hot or cold

SDP1A1.2.2 Operating Characteristics

SDP1A1.2.2.1 The first set of Operating Characteristics concern the output of the Generating Unit and its ability to change its output level of active or reactive power and, in the case of Pumped Storage Plant only, its ability to pump water from the lower to the upper reservoir.

- (a) Capacity. As defined in GD.
- (b) Minimum Generation. As defined in GD.
- (c) Maximum Generation. As defined in GD.
- (d) Reactive Power capability. The levels of Reactive Power, both leading and lagging, deliverable at specified output levels. Reactive Power =  $v * I * \sin$ , where is the phase angle.
- (e) Spinning Reserve capability. The ability of the Generating Unit, when part-loaded, to increase its output under governor control in certain time scales.
- (f) Notice to Synchronize. As defined in GD.
- (g) Block Load on Synchronization. As defined in GD.
- (h) Loading Rate. As defined in GD.
- (i) De-Loading Rate. As defined in GD.
- (j) Minimum Up-Time. As defined in GD.
- (k) Minimum Down-Time. As defined in GD.
- (l) Maximum fuel changes. The maximum number of fuel changes that a Generating Unit can be required to do in a 24 hour period.

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- (m) Turbine head. As defined in GD.
- (n) River flow rate. (For run-of-river Hydro Power Plant only) the expected flow rate of the river (in m<sup>3</sup> per hour). Where appropriate this may be given on a Power Plant basis.
- (o) Reservoir capacity. (For reservoir Hydro Power Plants, including Pumped Storage Plant, only) the volume of water currently held in the reservoir.
- (p) Pumping capability. (For Pumped Storage Plant only) the volume of water which can be pumped (in m<sup>3</sup> per hour). Where appropriate this may be given on a Power Plant basis.
- (q) Pumping availability. (For Pumped Storage Plant only) the times during which the pumps are available to pump water and the MW levels of power required. Where appropriate this may be given on a Power Plant basis.

SDP1A1.2.2.2 The second set of Operating Characteristics concern the economics of operation of the Generating Unit. Subject to agreement, in writing, from EGAT (such agreement not to be unreasonably withheld), a Generator may submit information about the economics of operation of its Generating Unit in accordance with the provisions of either SDP1A1.2.2.3 or SDP1A1.2.2.4. These Operating Characteristics are known as Economic Operating Characteristics.

SDP1A1.2.2.3 The first option requires the Generator to provide the following information for each of its Generating Units:

- (a) Fuel. A statement of the type or types of fuel used by the Generating Unit.
- (b) Specific energy content of fuel. The number of BTU of energy in each standard unit (volume or weight) of a fuel.
- (c) Start-Up heat. The energy, in BTU/Start-Up, required to perform a Start-Up, cold (with boiler cold), cold (with boiler on Hot Standby), warm and hot conditions.
- (d) No-load heat. The energy, in BTU/hour, required to keep the Generating Unit Synchronized to the System, but at zero MW output.
- (e) Incremental heat. The energy, in BTU/MWh, required to produce net output from the Generating Unit.
- (f) Standby start up heat. The energy, in BTU, required to bring the boiler from cold or warm to Hot Standby.

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- (g) Hot Standby heat. The energy, in BTU/hour, required to maintain the boiler at Hot Standby.
- (h) Start O and M costs. The cost, in Baht/Start-Up, of the non-fuel operation and maintenance costs associated solely with a Start-Up.
- (i) Output O and M costs. The cost, in Baht/MWh, of the non-fuel operation and maintenance costs associated solely with producing power output.
- (j) Standby start up O and M costs. The cost, in Baht/start, of the non-fuel operation and maintenance costs associated solely with bringing a boiler to Hot Standby condition.
- (k) Hot Standby O and M costs. The cost, in Baht/hour, of the non-fuel operation and maintenance costs associated solely with keeping a boiler at Hot Standby condition.

SDP1A1.2.2.4 The second option requires the Generator to provide the following information for each of its Generating Units:

- (a) A Start-Up price. The price to Start-Up the Generating Unit, in Baht/hour, cold (with boiler cold), cold (with boiler on Hot Standby), warm and hot conditions.
- (b) A No-load price. The price to maintain the Generating Unit Synchronized to the System but producing no output, in Baht/hour.
- (c) An incremental price. The price for each MWh of output, in Baht/MWh, and is additional to the no-load price.
- (d) A standby start price. The price, in Baht/start, to bring a boiler from warm or cold to Hot Standby condition.
- (e) A Hot Standby price. The price, in Baht/hour, to keep a boiler at Hot Standby.

#### SDP1A1.3 EXTERNALLY INTERCONNECTED PARTY DECLARATIONS

The Operating Characteristics, including the Economic Operating Characteristics, of an External Interconnector define its ability to Import or Export or provide Reserve or other services, the cost (or price) of Imports and the expected volume and timing of Imports and Exports. For any External Interconnector, EGAT will agree with the Externally Interconnected Party what Operating Characteristics should be included in the Declarations required under this SDP1.

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**SDP2 – GENERATION DISPATCH****SDP2.1 INTRODUCTION**

SDP2.1.1 Scheduling and Dispatch Procedure SDP2 is complementary to SDP1 and SDP3. It sets out the Procedures for EGAT to:

- (a) issue Instructions to Generators;
- (b) give permission for a Generator or Externally Interconnected Party to take its Generating Unit or, as the case may be, its External Interconnector, out on Planned Outage; and
- (c) re-optimize the Daily Generation Program.

SDP2.1.2 Instructions concerning the Dispatch of Imports or Exports or any other services delivered across an External Interconnector will be agreed between EGAT and the Externally Interconnected Party.

SDP2.1.3 All Instructions shall be given in the Thai language.

**SDP2.2 OBJECTIVE**

SDP2.2.1 The objective of this SDP2 is to enable, as far as is possible, EGAT to match continuously Generation and Imports and Demand (together with an appropriate level of Reserve) in an economic way, taking account of:

- (a) the intentions expressed in the Daily Generation Program, including the requirements to release Generating Units and External Interconnectors on Planned Outage;
- (b) the Merit Orders as derived under SDP1;
- (c) the preservation of the integrity of the System; and
- (d) the Operating Standards to be adopted for System Frequency and System Voltage.

**SDP2.3 INFORMATION TO BE USED**

SDP2.3.1 In making decisions on which Generating Units to Dispatch, and which Imports and Exports to initiate and on the prudence of releasing

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Generating Units and External Interconnectors for Planned Outages, EGAT will take account of the following information to the extent that, in its reasonable opinion, is appropriate:

- (a) the Daily Generation Program, produced and issued in accordance with SDP1, for the day in question;
- (b) the latest Availability Declaration or Declaration of Operating Characteristics made in respect of any Generating Unit under SDP1.4.3 or SDP1.5.1;
- (c) the expected capabilities of any External Interconnectors and Imports and Exports across them as declared by the Externally Interconnected Parties to EGAT under SDP1.4.4 and SDP1.5.1;
- (d) the System Frequency and System Voltage as known to EGAT via the SCADA System; and
- (e) any other such information as EGAT, in its reasonable opinion, considers to be relevant.

SDP2.4 RELEASE OF GENERATING UNITS FOR PLANNED OUTAGE

SDP2.4.1 Outage optimization model determine the optimal schedule based on:

- (a) levelizing reserves
- (b) minimizing production cost

SDP2.5 INSTRUCTIONS

SDP2.5.1 Issue of Instructions

SDP2.5.1.1 Instructions relating to a particular day may be issued at any time during that day or, when operational reasons so dictate, at a time before the start of the day.

SDP2.5.1.2 Instructions will be issued by EGAT directly to the Generator at the relevant Power Plant and will include an exchange of operator names. They will be issued by Control Telephony or by such other means as has been agreed between EGAT and the Generator. Whenever possible, the Instruction will be given in the form laid down in Appendix 1 to this SDP2.

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- SDP2.5.1.3 The receipt of a Instruction must be formally acknowledged immediately by the Generator indicating the Generator's acceptance or non-acceptance of the Instruction. A Generator may only refuse to accept an Instruction properly given by EGAT:
- (a) on the grounds of safety of personnel or Plant; or
  - (b) because the Instruction requires the Generating Unit to perform outside of its capability as Declared under SDP1.4.3 or, as the case may be, SDP1.5.1 and:
    - (i) EGAT has not stated that the Instruction is issued under conditions of a System Emergency; or
    - (ii) in respect of Instructions to operate outside the current declared Capacity
- when only the reason given in SDP2.5.1.3(a) is a valid reason for non-acceptance.
- SDP2.5.1.4 In the event that a Generator experiences unforeseen difficulties in carrying out the Instruction, it shall inform EGAT of this fact without delay.
- SDP2.5.1.5 In addition to Instructions relating to the provision of Active Power, Instructions may include:
- (a) Instructions to switch in or switch out control of the Generating Unit by EGAT's AGC;
  - (b) Instructions to act in support of System Frequency through the provision of Reserve;
  - (c) Instructions to act in support of System Voltage through the Generation or consumption of Reactive Power;
  - (d) notice and changes of notice to Synchronise by a given time;
  - (e) Instructions to Synchronise or De-Synchronise;
  - (f) Instructions relating to the energising or tap positions of a Generation Transformer;
  - (g) Instructions relating to the operation of any protection equipment relating to the interface between the Power Plant and the Transmission System;
  - (h) Instructions relating to the operation of any control equipment relating to the interface between the Power Plant and the

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Transmission System; (where this duty has been given to the Generator through an agreement between the Generator and EGAT);

- (i) Instructions to change fuel (where this right is conferred on EGAT through an agreement between EGAT and the Generator);
- (j) Instructions to a Generator with a Hydro Power Plant to release water for irrigation purposes;
- (k) For Pumped Storage Plant only, Instructions to commence or to cease pumping.

SDP2.5.2 Action required from Generators

SDP2.5.2.1 A Generator will comply with any Instruction properly given by EGAT without delay, other than when, in accordance with the provisions of SDP2.5.1.3 it has declined to accept the Instruction or when, under the provision of SDP2.5.1.4, it has registered a difficulty in complying with the Instruction.

SDP2.5.2.2 Subject to the provisions of SDP2.5.2.1, a Generator will be required to achieve the following Dispatch accuracies in the operation of its Generating Units:

- (a) Synchronised or De-Synchronised within + 5 minutes of the Target Time.
- (b) Where no specific Target Time is given then, other than for a synchronisation or de-synchronisation Instruction, the output level to which it is Instructed will be achieved within + 2 minutes of the time it should have achieved if it changed output at its Loading, or, as the case may be, De-Loading Rate.
- (c) Where a specific Target Time is given then, other than for a synchronisation or de-synchronisation Instruction, the output level to which it is Instructed will be achieved within + 2 minutes of the Target Time.
- (d) Where Instructed to a particular output level, that level should be achieved (subject to any necessary adjustments to take account of any difference between the Target Frequency and the System Frequency) within an accuracy of + 2% of the Capacity of the Generating Unit, as given in its Registered Operating Characteristics.

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SDP2.6 RE-OPTIMISATION OF THE DAILY GENERATION PROGRAM

SDP2.6.1 EGAT will re-optimize the Daily Generation Program if, in its reasonable opinion, this is necessary. In carrying out a re-optimisation EGAT will take account of those factors laid out in SDP1.4 and SDP1.5 as it reasonably considers are necessary.

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**SDP2 – APPENDIX 1**

## SDP2A1.1 INSTRUCTIONS

SDP2A1.1.1 Instructions will normally be given in the following form:

- (a) exchange of operator names;
- (b) identification of the specific Generating Unit or, in the case of a pumping Instruction to a Pumped Storage Plant, the identification of the specific pump (if this is not the same as the identification of the relevant Generating Unit) to which the Instruction applies;
- (c) the duty which the Generating Unit is to perform or the output level to which it is instructed;
- (d) the start time at which the Generating Unit is to start complying with the Instruction (if this is different from the Instruction issue time);
- (e) where necessary, a Target Time by which the output level must be reached or the Instruction must be completed;
- (f) the issue time of the Instruction.

SDP2A1.1.2 Examples of the main types of Instructions to be given are shown below. In each example it is assumed that the required exchange of names has taken place. An Instruction can have both a start time and a Target Time, although not all possible combinations of these dates have been shown.

SDP2A1.2 Instruction to change output level

SDP2A1.2.1 In each example the Instruction is for Unit 3 to change output to 200MW, with the Instruction given at 1300 hours:

- (a) In this first version, the implementation of the Instruction starts immediately:

"Unit 3 to 200MW, instruction timed at 1300 hours"

- (b) In this next version, the implementation of the Instruction starts in one hour:

"Unit 3 to 200MW, start time 1400 hours, instruction timed at 1300 hours"

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- (c) Finally, the Instruction is to achieve the Instructed level by 1330 hours:

"Unit 3 to 200MW at 1330 hours, instruction timed at 1300 hours"

SDP2A1.3 Instruction to Synchronise

SDP2A1.3.1 In the case of a Synchronise Instruction, it would be normal to issue a loading Instruction at the same time. If such a loading Instruction is not included then the Generating Unit should be Synchronised and immediately loaded (in accordance with its current Loading Rates) to its Minimum Generation level (at which point, the Generator will report to EGAT that it has achieved this level). In giving a Synchronisation Instruction, EGAT shall always due regard for the Notice to Synchronise time given by the Generator and, for this Instruction, will always give a Target Time.

SDP2A1.3.2 In the example below, Unit 2 has been Instructed to Synchronise, with the Instruction issued at 0800 hours. The Notice to Synchronise time for the Generator is 4 hours:

- (a) In this first example, the required synchronisation time is in line with the Notice to Synchronise time:

"Unit 2 synchronise at 1200 hours, instruction timed at 0800 hours"

- (b) If the required synchronisation time is later than required by the Notice to Synchronise time, the Instruction would be of the form:

"Unit 2 synchronise at 1400 hours, instruction timed at 0800 hours"

SDP2A1.4 Instruction to De-Synchronise

SDP2A1.4.1 In the case of an Instruction to De-Synchronise, (or "Shutdown") the required de-loading Instruction is assumed to be included. In the case where the Generating Unit is not required to immediately de-load and come off, a Target Time will be given.

SDP2A1.4.2 In the examples below, Unit 1 is running at 60MW and has a De-Loading Rate of 6MW/minute. It is given a de-synchronisation Instruction at 1100 hours. Based upon its De-Loading Rate it can De-Synchronise by 1110 hours.

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- (a) If Unit 1 is required to De-Synchronise as soon as possible, the Instruction is:

"Unit 1 shutdown, instruction timed at 1100 hours"

- (b) If, however, Unit 1 is required to De-Synchronise by 1200 hours, the Instruction will be:

"Unit 1 shutdown at 1200 hours, instruction timed at 1100 hours"

SDP2A1.5 Frequency control

SDP2A1.5.1 Instructions to change the Target Frequency by EGAT's National Control Centre to units in AGC and for use by units to be switched in AGC. This can be controlled via the SCADA computer under the control of the National Control Centre.

SDP2A1.6 Instruction to provide Operating Reserve

SDP2A1.6.1 The Instruction to provide Operating Reserve will normally be given as part of a loading Instruction. An example would be:

"Unit 4 to 100MW and 10MW Operating Reserve, instruction timed at 1330 hours"

SDP2A1.7 Instruction to provide Voltage support

SDP2A1.7.1 To provide Voltage support to the System, EGAT may Instruct Generators in a number of ways. Unless the Voltage support Instruction has with it an Active Power loading Instruction, the Generator must maintain the Active Power output of its Generating Unit at the current Instructed level. Examples of Voltage support Instructions are:

- (a) "Unit 1 increase Reactive Power output by 10MVAR, instruction timed at 1200 hours"
- (b) "Unit 2 maximum Reactive Power output, instruction timed at 1200 hours"

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**SDP3 – FREQUENCY AND VOLTAGE CONTROL****SDP3.1 INTRODUCTION**

SDP3.1.1 Scheduling and Dispatch Procedure SDP3 sets out the Procedure for EGAT to use to undertake the direction of System Frequency and System Voltage control and lays down the duties of the Generators in this respect.

SDP3.1.2 The maintenance of System Frequency and System Voltage is a major factor in the Scheduling and Dispatch of Generation, covered in Scheduling and Dispatch Procedures SDP1 and SDP2. This Procedure SDP3 is therefore complementary to Procedures SDP1 and SDP2.

SDP3.1.3 During a Under Frequency Emergency, Partial Blackout, Total Blackout, or High Frequency Emergency and the period following such an occurrence during the restoration of the System, the System may be operated outside Normal System Frequency and Normal System Voltage and the Scheduling and Dispatch of Generating Units in accordance with the Merit Order may cease.

**SDP3.2 OBJECTIVE**

SDP3.2.1 The objective of SDP3 is to lay down the Procedure to enable EGAT to maintain, as far as is reasonably possible, System Frequency and Voltage within the required operational limits.

**SDP3.3 SYSTEM FREQUENCY CONTROL****SDP3.3.1 Responsibilities**

SDP3.3.1.1 EGAT shall be responsible for co-ordinating the Scheduling of the operation of Generating Units and Imports and Exports across the External Interconnectors, in accordance with SDP1, and issuing Instructions, in accordance with SDP2, to control the System Frequency and shall ensure that, as far as is practicable, sufficient Operating Reserve as laid down in OP4, has been Scheduled and Dispatched.

**SDP3.3.2 Frequency Control**

SDP3.3.2.1 A System Frequency of 50Hz shall be maintained utilising the Automatic Frequency Control Computer System owned and operated by EGAT.

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- SDP3.3.2.2 Generators must allow their Generating Units to operate under Automatic Frequency Control or Governor Droop regulation at all times unless technical reasons preclude this mode of operation (which fact must be reported to EGAT without delay, as laid down in SDP1 and SDP2) or unless relieved of this obligation by EGAT.
- SDP3.3.3 Emergency Action
- SDP3.3.3.1 If System Frequency falls, not transiently, to or below 49.25Hz and no specific Instruction to the contrary is issued within 1 minute, then all Generators shall increase the output of their Synchronised Generating Units, either manually or automatically, which increase must not be overridden other than for reasons of safety, of either personnel or Plant.
- SDP3.3.3.2 If System Frequency rises, not transiently, to or above 50.75Hz and no specific Instruction to the contrary is issued within 1 minute, then all Generators shall reduce the output of their Synchronised Generating Units, either manually or automatically, by a minimum of 2% of Generating Unit output per 0.1Hz deviation from Target System Frequency.
- SDP3.3.3.3 Such changes in output required in SDP3.3.3.1 and SDP 3.3.3.2 shall be made without reference to EGAT and shall be maintained until System Frequency has returned to Target System Frequency or the Generator has received a revised Instruction under SDP2. In order to assist EGAT in its control of System Frequency, EGAT shall be informed of the action taken as soon as practicable, and in any event within 5 minutes, after the change in System Frequency to the defined level.
- SDP3.3.3.4 During a High Frequency System Emergency Generating Units may be Instructed to De-synchronise even if this breaches the requirements of their then current Declaration of Minimum Up-Time and refusal of such Instruction is only allowed on the grounds of safety to personnel or Plant.
- SDP3.3.3.5 If, in the preparation of the Weekly or Daily Generation Program, or during the Dispatch of Generating Units, the flexibility of operation of the Generating Units (as demonstrated by their then current Declared Operating Characteristics) is, in EGAT's reasonable opinion, such that the Scheduling of sufficient Operating Reserve is not possible, then EGAT will:
- contact any Generator in respect of any of its Generating Units for which the then current Declared Operating Characteristics provide less flexibility of operation than the Registered Operating Characteristics and request that the Generator provides revised values where appropriate (and such revised values, to the extent that they are offered shall form the basis of such decision making on Scheduling and Dispatch as EGAT is required to perform);

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- SDP3.4            SYSTEM TIME
- Not used
- SDP3.5            SYSTEM VOLTAGE CONTROL
- SDP3.5.1        On an A.C. System it is necessary not only to meet the Active Power requirements of the System, but also the Reactive Power requirements.
- SDP3.5.2        Responsibilities
- SDP3.5.2.1      EGAT will decide on the Reactive Generation and Reactive Reserve capacity required and shall take account of such requirements in the Scheduling and Dispatch of Generating Units under SDP1 and SDP2.
- SDP3.5.2.2      Generators shall ensure that their Synchronised Generating Units are operated to maintain the Voltage level and provide the Reactive Generation and Reactive Reserve required by EGAT at all times unless technical reasons preclude this mode of operation (which fact must be reported to EGAT without delay, as laid down in SDP1 and SDP2) or unless relieved of this obligation by EGAT.
- SDP3.5.3        Emergency Action
- SDP3.5.3.1      To maintain stable conditions throughout the System under Emergency Conditions, Generators will take the following actions in respect of their Synchronised Generating Units.
- SDP3.5.3.2      In the event of a sudden drop in System Voltage and a corresponding rise in Reactive Generation, Generators must ensure that the additional MVAR output of their Generating Units must be maintained and they must not reduce Field Current until so Instructed by EGAT other than for reasons of safety, of either personnel or Plant. Generators must increase the MVAR output of their Synchronised Generating Units to the maximum capability of the Unit when so Instructed by EGAT.
- SDP3.5.3.3      In the event of a sudden rise in System Voltage and a corresponding fall in Reactive Generation, Generators must not take action to recover MVAR output lost on their Generating Units and they must not increase Field Current until so Instructed by EGAT other than for reasons of safety, of either personnel or Plant.
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**GC1 - GENERAL PROVISIONS****GC1.1 INTRODUCTION**

Whilst each Procedure in the Grid Code contains the rules and provisions relating specifically to that Procedure, there are provisions which are of more general application. These are covered in this Procedure GC1.

**GC1.2 OBJECTIVES**

The General Provisions (GC1) are of general application to all provisions of the Grid Code. Their objective is to ensure, to the extent possible, that the various sections of the Grid Code work together in practice and for the benefit of all Users.

**GC1.3 SCOPE**

The General Provisions apply to EGAT and all Generators and Users.

**GC1.4 UNFORSEEN CIRCUMSTANCES**

If circumstances arise which the provisions of the Grid Code have not foreseen, EGAT shall, to the extent reasonably practicable in the circumstances, consult promptly and in good faith with all affected Users in an effort to reach agreement as to what should be done. If agreement between EGAT and those Users as to what should be done cannot be reached in the time available, EGAT shall determine what is to be done. Wherever EGAT makes a determination, it shall be having regard, wherever possible, to the views expressed by Users and, in any event, to what is reasonable in all the circumstances. Each User shall comply with all instructions given to it by EGAT following such determination provided that the instructions are consistent with the then current technical parameters of the particular User's System registered under the Grid Code. EGAT shall promptly refer to all such unforeseen circumstances and any such determination to the Panel for consideration in accordance with GC2.

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- GC1.5 DEROGATIONS
- GC1.5.1 If a User finds that it is, or will be, unable to comply with any provision of the Grid Code, then it shall, without delay, report such non-compliance to EGAT and, subject to the provisions of paragraphs GC1.5.2 and GC1.5.3, make such reasonable efforts as are required to remedy such non-compliance as soon as reasonably practicable.
- GC1.5.2 When the non-compliance is with reference to Apparatus connected to the System and is caused solely or mainly as a result of an amendment to the Grid Code, issued pursuant to GC2.2.4 of GC2, and the User believes that it would either be unreasonable to require it to remedy such non-compliance or that it should be granted an extended period to remedy such non-compliance, it shall promptly submit to EGAT a request, in writing, for a derogation from such provision in accordance with the requirements of paragraph GC1.5.4.
- GC1.5.3 When the non-compliance is in respect of Apparatus for which approval to connect to the System is being sought, and the User believes that it would either be unreasonable to require it to remedy such non-compliance or that it should be granted an extended period to remedy such non-compliance, it shall promptly submit to EGAT a request, in writing, for a derogation from such provision in accordance with the requirements of paragraph GC1.5.4.
- GC1.5.4 A request for a derogation from any provision of the Grid Code shall contain the following information:
- (a) the issue number and date of the Grid Code against which the present or predicted non-compliance was identified;
  - (b) identification of the Apparatus, if any, in respect of which a derogation is sought;
  - (c) identification of the provision of the Grid Code with which the User is, or will be, unable to comply;
  - (d) the reason for non-compliance with the provision; and
  - (e) if the User is seeking a delay in achieving compliance, the date by which such compliance will be achieved.
- GC1.5.5 On receipt of any request for a derogation made to it pursuant to paragraph GC1.5.4, EGAT shall consider such request and shall grant such derogation only if, in its reasonable opinion, the derogation can be granted without it having an adverse material impact on the security, stability or economics of System operation. In its considerations, EGAT may contact the relevant User to request clarification or the consideration of changes to the request. Once EGAT has come to a decision on the request it shall promptly inform the User of its decision and, in the event that it refuses to
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grant the derogation, its reasons for such refusal. EGAT shall table any such requests which have been granted at the next following meeting of the Panel.

GC1.6 COMMUNICATION BETWEEN EGAT AND USERS

GC1.6.1 Unless otherwise specified in the Grid Code all instructions given by EGAT and communications (other than relating to the submission of data and notices) between EGAT and Users shall take place as follows:

- (a) where the User is a Generator communications shall take place between the EGAT Control Engineer based at the EGATCC notified by EGAT to each Generator from time to time, and the Generator's Power Plant; and
- (b) where the User is an Externally Interconnected Party communications shall take place between the EGAT Control Engineer based at the EGATCC notified by EGAT to each Externally Interconnected Party from time to time, and the Externally Interconnected Party Control Engineer based at the Externally Interconnected Party Control Centre notified by the Externally Interconnected Party to EGAT from time to time.

GC1.6.2 Unless otherwise specified in the Grid Code, all instructions given by EGAT and communications (other than relating to the submission of data and notices) between EGAT and Users will be given by means of the Control Telephony.

GC1.6.3 If the EGAT Control Centre is moved to another location, whether due to an emergency or for any other reason, EGAT shall notify the Users of the new location and any changes to the Control Telephony necessitated by such move, as soon as practicable following the move.

GC1.6.4 If the Externally Interconnected Party's Control Centre notified to EGAT by an Externally Interconnected Party is moved to another location, whether due to an emergency or for any other reason, EGAT shall be notified by the Externally Interconnected Party of the new location and any changes to the Control Telephony necessitated by such move, as soon as practicable following the move.

GC1.6.5 The recording (by whatever means) of instructions or communications given by means of Control Telephony will be accepted by EGAT and Users as evidence of those instructions or communications.

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**GC1.7 DATA AND NOTICES**

**GC1.7.1** Data and notices to be submitted to EGAT under the Grid Code (other than data which is the subject of a specific requirement of the Grid Code as to the manner of its delivery) shall be delivered in writing either by hand or sent by registered first-class, pre-paid post, or by facsimile transfer.

**GC1.7.2** Data delivered pursuant to paragraph GC1.7.1, in the case of data being submitted to EGAT, shall be addressed to EGATCC at the address notified by EGAT to each User from time to time, or to such other Department within EGAT or address, as EGAT may notify each User from time to time, and in the case of notices to be submitted to Users, shall be addressed to the chief executive of the addressee (or such other person as may be notified by the Users in writing or EGAT from time to time) at its address(es) notified by each User to EGAT in writing from time to time for the submission of data and service of notices under the Grid Code (or failing which to the registered or principal office of the addressee).

**GC1.7.3** All data items, where applicable, will be referenced to nominal Voltage and Frequency unless otherwise stated.

**GC1.8 OWNERSHIP OF PLANT AND/OR APPARATUS**

References in the Grid Code to Plant and/or Apparatus of a User include Plant and/or Apparatus used by a User under any agreement with a third party.

**GC1.9 SYSTEM CONTROL**

Where a User's System (or part thereof) is, by agreement, under the control of EGAT, then for the purposes of communication and co-ordination in operational timescales EGAT can (for those purposes only) treat that User's System (or part thereof) as part of the EGAT Transmission System, but, as between EGAT and the User, it shall remain to be treated as the User's System (or part thereof).

**GC1.10 EMERGENCY SITUATIONS**

Users should note that the provisions of the Grid Code may be suspended pursuant to any directions given and/or orders made by Cabinet resolution and/or National Energy Policy Council.

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**GC1.11 CONFIDENTIALITY**

EGAT and Users shall treat all information received under this Grid Code as confidential and shall only release this information to third parties:

- (a) where required to do so under any provision of the Grid Code;
- (b) where required to do so under any law or statute;
- (c) where the information has entered the public domain other than by EGAT or this User breaching the conditions of this GC1.11.

**GC1.12 APPROVALS BY EGAT**

Notwithstanding any other provisions of this Grid Code:

- (a) any review by EGAT of any material, documents, designs, drawings, schedules, design data or other information submitted by a Generator concerning any of its Power Plants or the Apparatus therein or Apparatus at the User's side of a Connection Point under this Grid Code; and
- (b) any inspection or testing by EGAT of a Power Plant, the Apparatus therein or Apparatus at the User's side of a Connection Point, undertaken pursuant to this Grid Code;

shall not be deemed to constitute an endorsement or a warranty or other assurance by EGAT of the safety, durability or reliability of the Power Plant or the Apparatus therein or Apparatus at the User's side of a Connection Point.

**GC1.13 HIERARCHY**

- GC1.13.1** In the event of any conflict between the provisions of any direction of the Energy Policy and Planning Office and any provisions of the Grid Code, the provisions of such direction shall prevail (provided that such direction is binding upon the person to whom it is addressed), and neither EGAT nor any User shall be liable for failing to comply with the conflicting provision of the Grid Code.

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- GC1.13.2 In the event of any conflict between the provisions of the Grid Code and the provisions of any contract, agreement or arrangement between EGAT and a User, then the provisions of the Grid Code shall prevail.
- GC1.13.3 Where for an External Interconnector there exists a specific written agreement between EGAT and the Externally Interconnected Party covering any matter included in this Grid Code, then this agreement shall apply and, for the purposes of this Grid Code, EGAT shall treat the External Interconnector as if it were part of the Transmission System. In all other cases the provisions of the Grid Code concerning External Interconnectors shall apply
- GC1.14 ILLEGALITY AND PARTIAL INVALIDITY
- GC1.14.1 If any provision of the Grid Code should become or be declared unlawful or partially invalid for any reason, the validity of all remaining provisions of the Grid Code shall not be affected.
- GC1.14.2 If part of a provision of the Grid Code is invalid or unlawful but the rest of such provision would remain valid if the wording were deleted, the provision shall apply with such modifications as may be necessary to make it valid and effective but without affecting the meaning or validity of any other provision of the Grid Code.

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**GC2 – GRID CODE REVIEW****GC2.1 INTRODUCTION**

It is accepted that circumstances may arise which will require changes to the Grid Code. This procedure provides a framework within which the relevant changes can be made.

**GC2.2 OBJECTIVE**

The Grid Code Review Procedure (GC2) defines the framework which has been adopted to keep under review the rules and provisions contained in the Grid Code, to allow consideration by all users of suggested changes to the Grid Code and to allow for amendments to the Grid Code to be disseminated.

**GC2.3 THE GRID CODE REVIEW PANEL**

GC2.3.1 EGAT shall establish and maintain the Panel, which shall be a standing body to carry out the functions referred to in paragraph GC2.3.2.

GC2.3.2 The Panel shall:

- (a) keep the Grid Code and its working under review;
- (b) review all suggestions for amendments to the Grid Code which the National Energy Policy Council or any User may wish to submit to EGAT for consideration by the Panel from time to time;
- (c) publish recommendations as to amendments to the Grid Code that EGAT or the Panel feels are necessary or desirable and the reasons for the recommendations;
- (d) issue guidance in relation to the Grid Code and its implementation, performance and interpretation when asked to do so by any User;
- (e) consider what changes are necessary to the Grid Code arising out of any unforeseen circumstances referred to it by EGAT under GC1.4; and
- DK. (f) note all derogations granted to Users in respect of the Grid Code.

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GC2.3.3 The Panel shall consist of the following persons [each of who shall have a vote]:

- (a) a Chairman appointed by Power Regulator;
- (b) [4] persons representing EGAT (as Transmission System operator);
- (c) [2] persons representing Generators;
- (d) [1] person representing Externally Interconnected Parties;
- (e) [1] person appointed by, and representing, the National Energy Policy Council.

each of whom shall be appointed in accordance with the rules issued pursuant to GC2.3.4 below.

GC2.3.4 The Panel shall establish and comply at all times with its own rules and procedures relating to the conduct of its business, which shall be approved by the National Energy Policy Council.

GC2.3.5 EGAT shall submit all proposed amendments to the Grid Code (regardless of which party proposes such amendment) to the Panel for discussion prior to fulfilling any obligations under its Licence in relation to wider consultation.

#### GC2.4 GRID CODE AMENDMENTS

EGAT shall, from time to time, prepare and issue, or make available for issue (and shall publish that such Grid Code is available), amended versions of the Grid Code containing such amendments as have been discussed and agreed by the Panel.

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