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EWURA

**Guidelines for Developers of
Small Power Projects in Tanzania**

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Guidelines for Developers of Small Power Projects in Tanzania

1. NOTE TO READER

These Guidelines are intended to assist Small Power Project (SPP) developers (also referred to as “Sellers¹”) to understand:

- The SPP legal framework and process;
- EWURA’s licensing requirements and procedures;
- How to obtain authorizations from other government institutions; and
- Other technical, commercial and regulatory requirements necessary to bring an SPP into operation.

These Guidelines are for information purposes only and may not reflect the most current legal developments, judgments or regulatory decisions relevant to the development of an SPP in Tanzania. No person should act or refrain from acting on the basis of any matter contained in these Guidelines without first seeking the appropriate legal or other professional advice on the particular facts and circumstances. These Guidelines should be read together with the subsidiary legislation governing SPPs which can be found in the Regulations issued by the Ministry and the Rules issued by the Authority. In the event of a discrepancy between these Guidelines and Regulations or Rules, the Regulations or Rules shall control.

EWURA may, as it deems appropriate, grant modifications, waivers or extensions to requirements and timelines set out in these Guidelines.

2. INTRODUCTION

In 2003, the Government of Tanzania adopted a National Energy Policy intended to encourage private investment in development projects based upon the rational exploitation and management of resources, and the protection of the environment. The policy acknowledged the need to establish a legal framework for renewable energy development together with institutional structures and mechanisms to address technical, social and financial barriers to the expansion of renewable energy technologies. In furtherance of that policy, the Ministry of Energy and Minerals (MEM) has, in consultation with EWURA and sector stakeholders, developed a set of legal instruments

¹ The terms “Seller” and “SPP developer” are used interchangeably in this document. A Developer initiates and builds a Project. Upon reaching commercial operation, Developer becomes the Seller and the Project becomes a generation facility.

and technical arrangements intended to increase the number of clean Small Power Projects established by the private sector.

For the purpose of these Guidelines and EWURA Rules (Rules), the term Small Power Project (SPP) means a power plant that uses a renewable energy source, waste heat, or cogeneration² of heat and electricity, with an export capacity of up to ten (10) MW. In addition to promoting renewable energy and cogeneration, many SPPs are expected to contribute significantly to the expansion of rural electrification. In order to increase investment in and reduce costs related to rural electrification, section 39(2) of the Electricity Act (2008) requires EWURA to pursue light-handed regulation of such projects.

SPPs connected to Tanzania's main grid operate under conditions that are significantly different from SPPs connected to small, isolated grids.³ Similarly, conditions for generators that sell power on a wholesale basis to the national grid (currently owned and operated by TANESCO) are distinguishable from those selling directly to retail customers (e.g., households or local businesses).

In order to simplify and speed up the development of SPPs and establish arrangements that are as fair and risk free as possible, the MEM decided, where feasible, to employ standardized forms and agreements. For Small Power Projects selling wholesale electricity to a (DNO)⁴ (Cases 1 and 2), the standardized approach utilizes a Standardized Power Purchase Agreement (SPPA)⁵ and a Standardized Power Purchase

² A cogeneration plant is a plant that simultaneously produces both electricity and useful heat. Generally this means capturing the waste heat from the electrical generation process that, in a conventional power plant, is released through cooling towers and smokestacks. Cogeneration plants that use renewable fuels to generate at least 75% of total electrical output shall be considered renewable energy plants. Cogeneration plants that use non-renewable fuels (e.g. coal, natural gas, fuel oil) to generate 25% or more of their total electrical output will be subject to the restriction that the facility must actually save fuel compared to a reference case in which electricity and heat are generated separately. More specifically, the SPP facility must achieve a primary energy savings of no less than 10% in each year compared with a base case scenario in which electricity and heat were produced separately.

³ In draft regulations to implement the Rural Electrification Act, these two cases are called "grid based commercial generation" and "generation in specified isolated systems", respectively.

⁴ The term Distribution Network Operator (DNO) refers to the licensee operating a distribution network in Tanzania. In Cases 1 and 2, the terms "DNO" and "Buyer" are used interchangeably in this and other SPP documents in the Tanzanian SPP program.

⁵For SPPs connected to the main grid, the appropriate PPA is the Standardized Power Purchase Agreement for Purchase of Grid-Connected Capacity and Associated Electric Energy Between Buyer and a Small Power Project. For mini-grid systems, the appropriate PPA is the Standardized Power Purchase Agreement for Purchase of Off-Grid Capacity and Associated Electric Energy Between Buyer and a Small Power Project. Both documents are available from EWURA's website.

Tariff (SPPT)⁶. After extensive public consultations both the SPPAs and the main-grid SPPT methodology have been formally adopted.

3. TARIFF MATTERS

The four most likely SPP cases are set out in the following table ⁷ and described below.

	Connected to main grid	Connected to isolated mini-grid
Selling wholesale (to DNO)	Case 1	Case 2
Selling retail (directly to final customers)	Case 3	Case 4

To protect both parties (the SPP Developer or Seller and the DNO) against future price fluctuations, the SPP tariffs used in Cases 1 and 2 include both a price floor and a price cap. The floor is equal to the tariff in the year in which the PPA between the Seller and the DNO enters into force. That price is “locked in” for the duration of the PPA to protect the SPP against possible reduction in the standardized tariff in future years. If the calculated tariff in a particular year goes below this floor, then the floor price will be applied. Similarly, if the calculated tariff rises above the price cap for a project signed in a particular year, then the price cap will be applied. The price cap equals 1.5 x Standardized tariff for the year the PPA enters into force. The price cap will be adjusted on an annual basis to reflect changes in the Consumer Price Index.

Each SPP is a “must take facility” which means that the DNO must take and purchase all of the net electric energy output (not exceeding the maximum 10 MW export limit) produced by the Seller and delivered and sold to the DNO.

The Working Group on Small Power Development (WGSPD) will, on an annual basis, revise wholesale sales tariffs to main grid-connected DNOs (Cases 1 and 2).⁸ In the future however, EWURA may decide to calculate SPP sales to the main grid itself. Whether the work is accomplished by the WGSPD or EWURA, the revised tariff will be revised in August of each year, and submitted for regulatory review by the 30th of

⁶ The Standardized Tariff Methodology Under the Standardized Small Power Purchase Agreements is available at EWURA’s web site.

⁷ Because it is possible, for example, for an SPP to sell both wholesale and retail, a project may be both “Case 1 and Case 3” or “Case 2 and Case 4”. In this situation the SPP is required to fulfill the requirements of both.

⁸ The WGSPD is hosted by REA and comprises WURA (as an observer), the Ministry of Energy and Minerals, representatives from SPP developers, the University of Dar Es Salaam, the Consumer Council, and TANESCO (in its capacity as the DNO/Buyer).

September. Tariffs for the subsequent year will be published in a newspaper of national circulation on or before the 30th of November each year.

Sometimes it will be necessary for a DNO to provide backup power to an SPP. The tariffs for sales by a DNO to an SPP are not covered by these Guidelines but will subsequently be addressed by EWURA.

In the event that EWURA is delayed in approving a revised SPP tariff for a given year, purchases will be paid at the most recent tariff until the new tariff becomes effective.

Case 1

Wholesale Tariff for Electricity Sold to the Main Grid

For the portion of electricity sold at wholesale by the SPPs to the main grid (Case 1), the standardized SPP tariff is based on the avoided cost of power purchases and power generation by the DNO.⁹ This means that electricity purchased from the Seller is purchased at the price that DNO pays for the additional amount of electricity it would have to procure from other suppliers such as:

- an IPP;
- a utility in interconnected neighboring countries; or
- one of its own generating units if the Seller is not connected.

The approved tariff methodology for Case 1 is in effect, an average of the DNO's long-run marginal cost (LRMC) and its short-run marginal cost (SRMC). The LRMC is as defined by TANESCO's long-term power plan. The SRMC is the budgeted cost of thermal generation for the next year.

Currently, TANESCO is the only DNO connected to the main grid. In the future, DNOs that are not affiliated with TANESCO are also expected to connect. At that time EWURA will decide whether or not to calculate separate avoided cost tariffs for each connected DNO.

Case 2

Wholesale Tariff for Electricity Sold to Isolated Mini-grids

In Case 2 electricity is sold to an isolated mini-grid (owned either by a DNO or another entity). Here, as in Case 1, the tariff uses a simple average of long-run and short-run

⁹ "Wholesale" means that the electricity is sold to a buyer/DNO for resale either to other wholesale buyers or to final retail customers.

marginal costs. However, in Case 2, the short-run marginal cost is calculated differently. In Case 2, the average incremental levelized cost of electricity from a new mini-grid diesel generator, including capital, fuel, and O&M costs is used. Because the Government of Tanzania eventually plans to extend the grid and interconnect with isolated mini-grids, the appropriate long run marginal cost is the long-run incremental cost of new grid-power generation, as defined in the power development plan, adjusted to remove transmission losses (since electricity from SPPs is consumed in the local distribution network). This higher tariff for SPPs selling at wholesale on isolated mini-grids (compared to the Case 1 grid connected SPP) is justified on the following grounds:

First, even though Case 2 SPP generators are “must-take facilities”, there may be many hours during a given year (the middle of most nights, for example) when an SPP is unable to sell its full capacity simply because there is insufficient load on the mini-grid. In distinction, generators connected to the main grid have a guaranteed market for full electricity production 24 hours a day, 7 days a week, subject only to occasional directives necessary for the DNO to protect its main grid. A higher tariff is necessary to make up for the lower likely rate of asset utilization for SPPs selling at wholesale to operators of isolated mini-grids.

Second, an SPP generator connected to a mini-grid is, for the most part, likely to be considerably smaller than grid-connected generators, and located in more remote areas. For these reasons it will require higher construction, maintenance, and repair costs per unit of electricity generated.

Third, and most importantly, an SPP connected to a mini-grid typically offsets very expensive diesel-generated electricity. Tanzania benefits economically from each new SPP developed on an isolated mini-grid, provided the SPP receives prices that are lower than the cost of diesel generation.

Transition:
From Case 2 to Case 1 (triggered by arrival of main grid)

When the main grid expands to interconnect with a mini-grid to which an SPP is selling electricity, the PPA and tariff will be those applicable to other main-grid connected SPPs. For that reason, the DNO, when responding to an initial application for a Letter of Intent (LOI) from a mini-grid SPP, should estimate when the mini-grid is likely to be connected to the main grid. In addition, the DNO should, on a semi-annual basis, keep the mini-grid connected SPP informed if grid-extension is expected to arrive and interconnect with the mini-grid network generator within one year. All such correspondences should be copied to EWURA. Six months prior to the expected date for interconnection with the main

grid, the DNO should notify the Seller of its intention to terminate the mini-grid PPA and to conclude a new 15-year main-grid PPA with the SPP. This notice should also be copied to EWURA. Changes to the interconnection equipment necessary to interconnect with the main grid should be reflected in an updated Application for Interconnection and Sale of Electricity including updated one-line diagrams submitted by the Seller (SPP) to the DNO no later than 90 days prior to the planned interconnection change. The application, if approved by the DNO, will trigger the DNO and the Seller to conclude a new main-grid PPA.

The DNO's decision to sign or reject a standardized PPA must be based solely on the DNO's evaluation of whether the Seller's facility as described in the Application is in compliance with the "Guide for Grid Interconnection of Embedded Generators to the Main Grid and Isolated Mini-Grids".

The new PPA and new tariff enter into force when the main grid is interconnected with the mini-grid.

Cases 3 and 4

Retail Tariffs for Electricity Sold to Final Customers (Cases 3 and 4)

A Seller selling directly to final (i.e., retail customers) must submit to EWURA an application for a cost-based tariff based on its own actual or projected total costs¹⁰ (expected to be largely generation and distribution costs) plus a reasonable profit for the portion of electricity sold to retail customers. The SPP developer must decide whether its proposed tariff is:

- a conventional 'per kWh' charge;

¹⁰ The tariff setting methodologies for all cases (1 through 4) are all "cost based." But in cases 1 and 2, the costs are determined by the *DNO's avoided costs*, whereas in cases 3 and 4, the costs are the *seller's costs*. *DNO avoided costs* are appropriate in cases 1 and 2 for two reasons. First, by setting the tariff at the DNO's avoided cost, only projects that can produce electricity at costs that save the DNO (and thus the country) money will be connected. This ensures that connecting SPPs will not cause financial strain on the DNO, and that additional SPPs will help lower (and never raise) electricity rates. Second, because the DNO's cost can be calculated at one time for all projects throughout the country, the transaction costs (computation and negotiation) are considerably less than if separate costs were calculated for each SPP. In cases 3 and 4, costs based on the SPP *costs of production* are more appropriate because (a) there is no comparable single buyer's cost that can be easily calculated; (b) the primary intention is extending rural electrification to areas with no electricity – which will lead to a benefit to society even in cases in which tariffs for a particular project are higher than the national average.

- a fixed monthly charge based on the number of lights and other appliances in the household¹¹; or
- another tariff mechanism.

The choice of tariff design will depend, in part, on whether the customer is metered or unmetered.

Although SPP tariffs may in some instances be higher than the National Uniform Tariff, for the following reasons, a tariff differential may be both necessary and appropriate. First, because generation and distribution costs for isolated mini-grids are likely to vary considerably, a uniform retail tariff (or a rate based on a formula) will be neither fair nor workable. A fair and workable approach must take into account the considerable variability in technical and economic conditions across mini-grid operators. Second, SPP tariffs are required to lead to a sustainable outcome. As such, fair and efficient tariffs for sales to retail customers should reflect reasonable projections of the SPP's own costs, benchmarked against the costs of comparable efficient and well-run enterprises using similar technologies and facing similar circumstances. This approach will enable SPP operators to earn a reasonable level of profit on its invested capital. This will also protect consumers from paying prices that reward excessive profits. Section 23(2) of the Energy Act, 2008 requires cost reflective tariffs based on efficient costs.

In accordance with its policy of light-handed regulation for SPPs, EWURA will apply a streamlined application and approval process when:

- (1) an SPP applicant has received a written approval from REA for a subsidy to connect rural customers;
- (2) the SPP's proposed tariff is at or below the tariff levels used by REA in calculating the subsidy that it will provide to the SPP;¹²
- (3) the SPP applicant submits to EWURA this REA-reviewed tariff and evidence that its potential customers and local governmental authorities have been notified of this proposed tariff;

¹¹ We would normally expect that unmetered customers who pay a fixed monthly charge will normally have a load limiting device attached to their connection to ensure that their load at any given moment does not exceed the maximum demand that they have paid for.

¹² In reviewing applications for grants, it is expected that REA will perform a *quasi* cost of service analysis that examines the projected costs of the SPP and the revenues needed to recover these costs (after factoring in the effect of the subsidy that REA would provide). Furthermore, it is our understanding that REA intends to compare these projected operating and capital costs with the costs of comparable projects to ensure that they are reasonable. Finally, it is also understood that the REA will also examine whether the proposed tariffs are likely to be affordable to customers in the targeted communities. These different review steps should provide a high level of protection to SPP retail customers.

In these circumstances EWURA will deem the tariff application to be approved, provided that it receives no objections to the application within twenty-one days after the SPP has filed the tariff application with EWURA.

In all circumstances, EWURA reserves the right to require an SPP to submit additional evidence that the tariff it proposes fair and reasonable.

Using this stream-lined tariff application processes, EWURA gives considerable weight to REA's decision to grant or deny a subsidy based on the SPP applicant's projected costs and revenues. However, because EWURA has no legal authority to delegate its tariff approval responsibilities to any other institution, EWURA shall, in all instances, make the final determination on an SPP's applied for tariff.

SPP tariff issues are addressed briefly in **Rule 25** of the Rules on the Development of Small Power Projects 2009.

4. SPP COORDINATING UNIT

Under the regulatory regime, TANESCO (the principal DNO for the near term) is required to establish an SPP Coordinating Unit to serve as a single point of contact for SPPs in interacting with various divisions within TANESCO. The Unit's principal work will be to:

- issue letters of intent (LOI);
- facilitate signing of PPAs with Sellers;
- review SPP progress reports;
- facilitate and coordinate between the Seller and TANESCO the building the interconnection and metering equipment and upgrading of the TANESCO system as necessary;
- at the time of initial interconnection, perform the function of the "Authorised Officer" to witness interconnection testing and issue the interconnection certificate.
- during commercial operation, accept invoices for electricity sales from the Sellers and forward them to the appropriate division within TANESCO for payment.
- monitor Seller performance and maintain a database of the SPP's power production;
- represent TANESCO as an active participant in the Small Power Development Group to review tariffs, guidelines, and other SPP documents; and

- conduct studies on prospective renewable energy development sites, and make such information available to developers.

The Procedures governing the role and activities of the Coordinating Unit are found in Rule 23 on the Development of Small Power Projects 2009.

EWURA-issued or approved instruments related to SPPs comprise the following documents:

- the SPPA;
- these Guidelines;
- the SPP Rules; and
- the technical requirements for interconnection of embedded generators to the main grid or isolated mini-grids, entitled “Guidelines for Grid Interconnection of Small Power Projects.

All of these documents can be downloaded from the EWURA website.

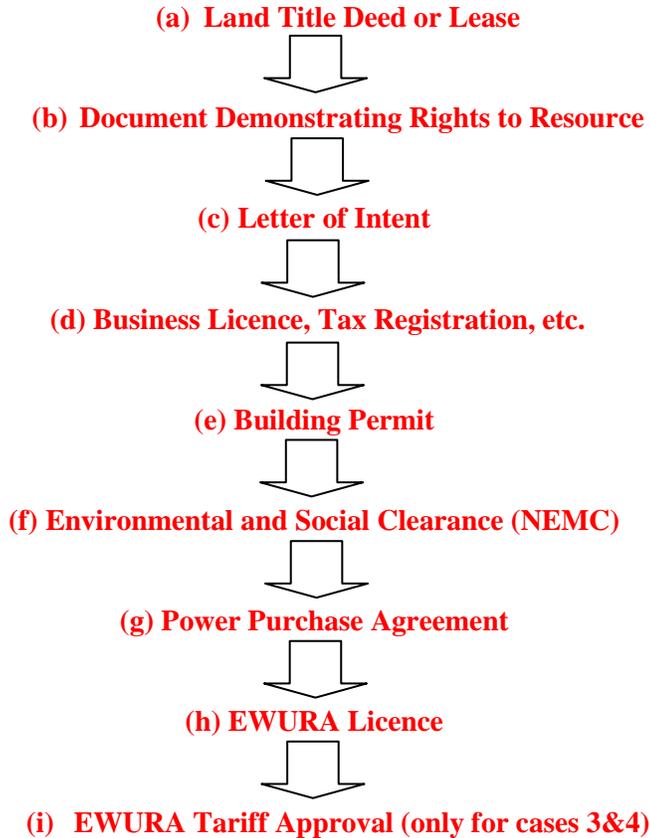
5. STEPS AND PROCEDURES

Most SPPs will progress through the following steps;

- Project identification;
- Securing rights to the resource;
- Acquiring necessary permits and licenses;
- Financing;
- Construction;
- Testing and Commissioning; and
- Operation and reporting,

Consents (permits, licenses, and clearances) required by various authorities for a grid-connected SPP are briefly discussed below. While many of these steps may be completed contemporaneously, some steps require prior permissions.

STEPS AND PROCEDURES
(DIAGRAM)



STEPS AND PROCEDURES
(DISCUSSION)

(a) Land Title Deed or Lease

Description: The SPP developer must hold either:

- a document of title (“deed”) issued by Ministry of Lands Housing and Urban Development for the land upon which the SPP shall be located; or
 - a document executed by the title holder of the land upon which the SPP shall be located granting the SPP developer permission to generate electricity on the land;
- or

- a letter of agreement to be executed by the title holder to lease/rent the land upon which the SPP shall be located.

Additional information on land use rights and evidence thereof is found in Rule 6 of the Rules on the Development of Small Power Projects 2009.

Project types exempt: none.

Issuing Authority: A title deed is issued by Ministry of Lands Housing and Urban Development. Derivative title agreements or letters of agreement are issued by the land title holder. The process of obtaining a title deed requires:

1. obtaining local permission to establish an SPP on a specific land parcel;
2. obtaining permission from the district level; and
3. obtaining permission (and the title deed) from the Ministry of Lands Housing and Urban Development.

(b) Document Demonstrating Rights to Resource (if applicable)

Description: The right to renewable energy resources that can be used to make electricity is sometimes contested. To avoid competing claims on the same resource, it is important that the SPP developer be able to demonstrate that he is the legal holder of rights to sufficient resources to make the project viable. If the proposed project is a hydropower project, required documents include water rights permission issued by the appropriate River/Lake Basin Water Office.

This is also governed by Rule 6 of the Rules on the Development of Small Power Projects 2009.

Project types exempt: Any project in which the right to use the fuel is wholly owned by the SPP developer is exempt. (For example, a SPP developed to burn the bagasse that is a waste product of a sugar mill owned by the SPP developer). Projects that use only solar or wind power are also exempt because at this time there is no Tanzanian agency that allocates rights to sun or wind resources.

See Rule 6 of the Rules on the Development of Small Power Projects 2009.

Issuing Authority and Application Procedure:

- For small hydropower, permission for water rights are granted by the appropriate River/Lake Basin Water Office. Contact information depends on which basin the project is in. The water basins include: Pangani Basin, Rufiji Basin, Lake Victoria, Wami-Ruvu, Lake Nyasa, Lake Rukwa, Internal Drainage Basin to Lake Eyasi, Manyara and Bubu Depression, Lake Tanganyika, Ruvuma and Southern Coast. The Division of Water Resources within the Ministry of Water and Irrigation (MOWI) coordinates activities of the Water Basins. Contact: Minister for Water and Irrigation, P.O. Box 9153, Dar es Salaam. Tel. 255 022 2452035. Fax 255 022 2452037. E-mail wmm@maji.go.tz.
- In addition to permission from the River/Lake Basin Water Office, the project developer must also obtain written consent from the respective village government where the project will be executed.

(c) LETTER OF INTENT

Description: SPPs selling electricity to a DNO do so pursuant to a Power Purchase Agreement (PPA). The first step toward concluding a PPA is the Letter of Intent (LOI). An LOI indicates that the DNO has no objections in principle to interconnecting a power plant of the proposed type, size and power export capacity at the proposed location. An LOI will facilitate the procuring of approvals required from other agencies and may also help to improve credibility for financing. No additional LOIs will be issued to the same site, or if the project proposal conflicts with another proposal to which a LOI has been previously issued.

Project types exempt: SPPs that are not synchronized with a DNO are exempt.

Issuing Authority and Application Procedure: To apply for a LOI, an SPP developer submits a Request for Letter of Intent to Interconnect an Embedded Generator to the DNO. The DNO may grant an LOI to an individual or to a company. An LOI is transferable to project-specific company.

A request for an LOI must include the following project related information.

- (1) The name and Address of the Developer;
- (2) The location (longitude and latitude) (to be marked on a survey map). If hydropower, identification of the river/stream/canal where the plant is located. Head and flow involved if applicable;
- (3) The fuel type (hydro, biomass, wind, etc.);
- (4) The power capacity (MW) and planned power export (MW), expected annual energy generation (GWh);
- (5) A copy of deed of title, concluded lease agreement, or a Letter of Agreement to lease/rent from the title holder; and
- (6) Evidence of approval of rights to resource, if applicable (e.g. water rights for a hydro project)

An application for an LOI must be accompanied by a fee of Tsh 50,000 paid to the DNO.

The form of a request for an LOI is found in Appendix 1

Forms

Form 1 -- Request for Letter of Intent to Interconnect an Embedded Generator to the DNO.

A DNO will make a decision either to grant or deny an LOI on the basis of its determination of:

- (1) the ability of the local electrical network to accept power from a power plant of the proposed type, size and power export capacity at the proposed location; and
- (2) whether the proposed SPP project conflicts with other on-going private or DNO projects.

The Procedures governing the application for and issuance of a LOI are found in Rules 7-10 of the Rules on the Development of Small Power Projects 2009.

(d) Business Registration, Licence, Taxpayer ID, Vat Certificate

Description: Permission to conduct business in Tanzania requires the completion of numerous steps, including company registration, obtaining a business license, and a tax certificate.

Project types exempt: none.

Application procedures and Issuing Authorities:

- (1) Application for clearance of the proposed company name at the Registrar of Companies;
- (2) Application for a certificate of incorporation and of commencement to Registrar of Companies;
- (3) Application for a taxpayer identification number (TIN) with the Tanzania Revenue Authority;
- (4) Inspection by Income Tax of the office site of the new company;
- (5) Application for business licence from the regional trade officer (depending on the nature of the business.
- (6) Obtain an inspection certificate from the land or town-planning officer;
- (7) Obtain Health Safety and Environment (HSE) certificate from the Occupational Safety and Health Authority (OSHA);
- (8) Application for a VAT certificate with the Tanzania Revenue Authority
- (9) Receive VAT/stamp duty inspection;
- (10) Register for the workmen's compensation insurance at the National Insurance Corporation; and
- (11) Obtain registration number at the National Social Security Fund (NSSF).

The requirements under this sub-section are not covered in the Rules on the Development of Small Power Projects 2009.

(e) **BUILDING PERMIT**

Description: Buildings must be permitted by the Tanzanian government. As appropriate, permits are needed to construct new buildings or to occupy existing buildings/premises.

Project types exempt: none.

Issuing Authority and Application Procedure: The issuing authority is the local government.

The requirements under this sub-section are not covered in the Rules on the Development of Small Power Projects 2009.

(f) Environmental and Social Clearances

Description: An Environmental Impact Assessment (EIA) is a process pursuant to which a proposal (including its alternatives) and its effect on the environment including the mitigation and management of effects is evaluated. An EIA is carried out in order to ensure that the likely effects of new developments are taken fully into account before the development is allowed to go ahead. The EIA process covers the period commencing at the initial concept of the proposal and run through implementation to completion and, where appropriate, decommissioning.

Project types exempt: As described below, depending on size and potential for impact, some projects may not require a full EIA.

Issuing Authority and Application Procedure: The issuing authority is the Minister responsible for Environment in the office of the Vice President, acting upon the recommendation of the National Environmental Management Council (NEMC). To determine whether a full EIA is necessary, the SPP developer should approach the NEMC and/or District Environmental Offices for an opinion (screening) on the need for EIA. Where such an approach is made, NEMC and or the District Environmental Offices will give their opinion within 45 days. To approach the NEMC for this decision, the SPP developer must register the project and submit a project brief. The process, including the requirements of the project brief, is described in “Environmental Impact Assessment and Audit Regulations, 2005.”¹³ On the basis of a project brief, the NEMC will determine whether only the project brief is necessary, or that a preliminary EIA is required, or that a full EIA is required.

The “Environmental Impact Assessment and Audit Regulations, 2005” includes Schedule 1¹⁴ which indicates the types of projects requiring and not requiring an EIA. According to the schedule, an EIA is mandatory for “production and distribution of electricity”, for hydropower projects and for large scale renewable energy projects, as well as all thermal power development (i.e. coal, etc.).

If the required study is completed satisfactorily and environmental impacts are shown to be able to be mitigated, the NEMC will forward the study to the Minister responsible for Environment under the Vice President’s Office for approval.

¹³ Available at: www.nemctan.org or at www.ira-aaia.org/documents_storage/2007-5-15-2-37-51_eia%20regulations%20-%20202005.pdf. The document is also available in hard copy from shops selling Tanzanian government documents.

¹⁴ Schedule 1, page 29.

The requirements under this sub-section are not covered in the Rules on the Development of Small Power Projects 2009.

(g) Power Purchase Agreement

Description: The four major forms of interaction between the SPP developer (Seller) and the DNO (Buyer) are:

- the request by the Seller for LOI;
- the issuance of an LOI by the DNO;
- the Application by the Seller for a PPA; and
- the Power Purchase Agreement (PPA).

The PPA is a contract between the DNO and Seller for the sale and purchase electricity. Standardized PPAs have been developed by EWURA in consultation with SPP developers and TANESCO. Although EWURA may modify the SPPA from time to time, any changes to a PPA shall only be applicable on a prospective basis. EWURA may also make exceptions for good cause shown, to any provision in the standardized PPA.

The Standardized PPA (SPPA) has the following principal features:

- It is a ‘must-take’ contract: all energy produced by the Seller will be purchased by DNO subject only to such necessary directions and protocols as may be issued by DNO for the protection of its electric system;
- The Power Purchase tariff, announced each year, is based on the DNO’s Avoided Costs, and is announced each year;
- The floor tariff over the term is 100% of the initial year tariff in which the PPA is signed;
- The tariff is capped at 150% (CPI-adjusted) of the tariff in the year in which the PPA is signed; And
- The PPA has a term of 15 years, starting from commencement date of operation.

The SPPA also includes duties and obligations that bind both the DNO and the SPP, including:

- (1) the grid interconnection requirements (specifying power quality standards, relay and other technical requirements for safe interconnection with the DNO grid),
- (2) metering arrangements;

- (3) billing and payment;
- (4) force majeure;
- (5) limitation of liability; and
- (6) dispute resolution.

The Model SPPA can be downloaded from the EWURA web site.

Project types exempt: SPPs that do not sell electricity to a DNO are exempt.

Issuing Authority and Application Procedure: To initiate the PPA agreement process, the Seller completes and submits to the DNO information called for in “Appendix 1, Form 3: “Application for Interconnection and Sale of Electricity”

The Procedures governing the application for and conclusion of an SPPA are governed by the Rules 16 et. seq. of the Rules on the Development of Small Power Projects 2009.

(h) EWURA Licence

Description: EWURA issues licenses to provide regulated services in the electricity, petroleum, natural gas and water and sewerage sectors of Tanzania.

Project types Exempt: SPPs up to 1 MW are exempt from EWURA’s licensing requirements.¹⁵

Generators exempted from EWURA license requirement are nevertheless required to register their generator with EWURA, SPPs not subject to licensure are required to register so that the Ministry of Energy and EWURA can nevertheless be availed of accurate information on the existence of electric generating facilities within Tanzania. “Registration Form for SPPs Under 1 MW” is found in Appendix 1.

Issuing Authority and Application Procedure: All non-exempt Sellers must complete and submit to EWURA a license application together with the required documents. A license application form is found in Appendix 1, Form 6 Form 6 -- Application Form for EWURA License for

Grid-interconnected SPP Greater than 1 MW in **Installed Capacity**”. If no substantial negative comments are received during the public comment period, then EWURA will use a fast track review and approval process.

¹⁵ According to The Electricity Act (2008), “any person who undertakes generation activities in rural areas where the installed generation capacity at a single site that is less than one megawatt shall be exempted from the requirement to obtain a license” (Article III, 18)

There may be situations in which EWURA may decide to issue a Provisional License. In this case, EWURA will direct the applicant regarding the steps necessary to obtain a full license.

The EWURA license application requires a fee of Tsh 100,000 paid to EWURA.

The Procedures governing the application for and conclusion of an SPPA are governed by the Rules 22 and 23 of the Rules on the Development of Small Power Projects 2009.

(i) **EWURA Approval of Retail Tariff (for Cases 3 and 4)**

Description: If electricity is sold directly to final (retail) customers, the Seller shall submit an application to EWURA for the approval of a cost-based tariff based on its own actual or projected total costs plus a reasonable profit for the portion of electricity sold to retail customers.

Project types exempt: SPPs that do not sell directly to final customers.

Issuing Authority and Application Procedure: The issuing authority is EWURA, which has legal authority and obligation to approve tariffs. In the event that the project has applied and received approval for a subsidy from REA, then EWURA may allow a streamlined application procedure described in these Guidelines.

6. QUESTIONS?

We hope you find these Guidelines helpful. For More Information, please contact:

EWURA:

Director General,
Energy and Water Utilities Regulatory Authority,
6th Floor, Harbour View Towers,
Samora Avenue,
P. O. Box 72175,
DAR ES SALAAM, TANZANIA
Telephone: +255 (22) 22123850/3/4/6
Facsimile: +255 (22) 22123180

Appendix 1

Forms

Form 1 -- Request for Letter of Intent to Interconnect an Embedded Generator to the DNO

Name:
Company:
Address:
Telephone:
Fax:
Email:

Date:

Dear Chief Executive Officer:
Distribution Network Operating Co.

I/we submit this Request for Letter of Intent to express my/our desire to develop, construct, and connect to the distribution network and operate an embedded generating plant, the details of which are given below.

1. Name and Address of the Developer.
2. Location (longitude and latitude) (to be marked on a survey map). If hydropower, identification of the river/stream/canal where the plant is located. Head and flow involved if applicable.
3. Fuel type (hydro, biomass, wind, etc.).
4. Power capacity (MW) and planned power export (MW), annual energy generation (GWh).
5. Copy of deed of title, concluded lease agreement, or a Letter of Agreement to lease/rent from the title holder.
6. Evidence of approval of rights to resource, if applicable (e.g. water rights for a hydro project).

I/we agree to provide any further information required by *the Distribution Network Operating Co.* to process this Initial Application.

Yours truly,

[Name (and Company, if any)]

Form 2 -- Template for Letter of Intent

Date:

Generating Company Name and Address:

Embedded Generating Plant Name and Address:

Site Reference Number:

Letter of Intent

This refers to your Initial Application dated [date of initial application], expressing your desire to develop the Embedded Generating Plant described above. The proposed Embedded Generating Plant has been allocated **the Site Reference Number** shown above, which should be used in all future correspondence with [DNO] and documentation about the Plant.

Details of the Embedded Generating Plant are the following:

[location, Province, District, land ownership details, map references and any other information useful to clearly identify the site]

The primary source of energy of the Embedded Generating Plant: [hydro, wind, biomass (specify the type such as saw dust, rice husk, wood), solar, CHP,etc.]

The Point of Supply (POS) location is []

The Point of Common Coupling (PCC) location is []

[*Distribution Network Operating Co.*] is pleased to inform you that we are agreeable to purchase electrical energy from the proposed Embedded Generating Plant (hereafter referred to as the Plant), subject to the Terms and Conditions shown below.

1. The Plant shall be built by [name of individual or Company], and shall remain under your ownership until such time the Plant enters Commercial Operation.
2. This Letter of Intent is not transferable, without the written consent of the [*Distribution Network Operating Co.*].

3. If at any time you decide not to proceed with development of the proposed Plant, you shall promptly inform the [*Distribution Network Operating Co*] about your decision.
4. The Plant shall be designed, built, commissioned and operated to satisfy the Standards and Requirements determined by the [*Distribution Network Operating Co*].
5. The design, construction, testing, commissioning and operation of the Interconnection of the Plant with the [DNO] network shall be according to the requirements and procedure specified in the "**Guide for Grid Interconnection of Embedded Generators, Tanzania**" (hereafter referred to as the **Guide**). A copy of the Guide will be provided to you upon request.
6. The physical location of the Point of Supply, at which the [*Distribution Network Operating Co*] shall meter and receive the Plant output, is shown in the attached single-line diagram.
7. The physical location of the Point of Common Coupling, beyond which other [*Distribution Network Operating Co*] customers may be connected, is also shown in the attached single-line diagram.
8. The [*Distribution Network Operating Co*] shall design and build the facilities (including transmission lines, distribution lines, switchgear and protection) required for the interconnection on the Utility-side of the Point of Supply. The [*Distribution Network Operating Co*] may also authorise some or all the facilities required for the interconnection to be built by you, according the [*Distribution Network Operating Co*] standards and other IEC Standards.
9. The [*Distribution Network Operating Co*] shall assist you to obtain any rights of way or easements required to build the interconnection facilities, including the transmission line.
10. The costs of all facilities explained in 8 above and the cost of any rights of way to be secured, shall be borne by you.
11. All equipment and transmission line(s) on the [*Distribution Network Operating Co*] side of the Point of Supply shall be maintained by the [*Distribution Network Operating Co*].

12. Tariff information [as approved by EWURA].
13. This Letter of Intent is valid for a period of six (6) months (unless extended as stipulated in the Guide), during which period you should submit to the [*Distribution Network Operating Co*] the Feasibility Study and an outline plan for the construction of the Plant. You should also provide the [*Distribution Network Operating Co*] the information required to proceed with studies required to specify the requirements for the interconnection.
14. A Power Purchase Agreement (PPA) shall be signed between [name of individual or Generating Company] and the [*Distribution Network Operating Co*], within the period of validity of this LOI, as extended by the [*Distribution Network Operating Co*].
15. The [*Distribution Network Operating Co*]-reserves the right to examine the detailed designs of the Plant and equipment, and the facilities required for the interconnection with the [*Distribution Network Operating Co*] network.
16. **Commissioning tests of the Plant** will be conducted by you, at your expense, and the [*Distribution Network Operating Co*]-shall be notified when such tests are conducted.
17. **Commissioning tests of the Interconnection facilities** (without actually making an interconnection) shall be conducted by you, at your expense, and the [*Distribution Network Operating Co*] shall be notified when such tests are conducted, and may attend such tests.
18. **Tests on the Interconnection** between the Plant and the [*Distribution Network Operating Co*] network shall be conducted by [Generating Company] and witnessed by [*Distribution Network Operating Co*] as specified in the Guide. The costs of such tests shall be borne by you.
19. It would be your sole responsibility to obtain all the necessary approvals for the construction of the Plant and Interconnection facilities from the relevant Government and other agencies.
20. It will be necessary for you to obtain a license from the Electricity and Water Utilities Regulatory Agency to generate and sell electricity to the [*Distribution Network Operating Co*]-prior to commencement of construction of the Plant.

21. Any costs incurred by you in the fulfilment of requirements specified in this letter are at your sole risk and expense, with no claim whatsoever on the [*Distribution Network Operating Co*]
22. The detailed feasibility report and the plan for construction, including the design details, should be submitted to the [*Distribution Network Operating Co*]-within six (6) months of the date of this LOI.
23. The progress of the project should be reported to the [*Distribution Network Operating Co*]-every three (3) months from the date of this LOI.

Yours truly,

[*Distribution Network Operating Co*].

Form 3 -- Application for Interconnection and Sale of Electricity

Note: Information in this Application shall be final and will be used in the PPA. This application should be submitted to the Distribution Network Operating Company, before the Letter of Intent expires

Site Reference Number: _____ Date of Letter of Intent: _____ valid until:

1. Information about the Generating Company

Name: _____
(this shall to be the special-purpose project Company, if so required by the Developer)

Address: _____

Phone/fax _____

Company registration information: _____

2. Project Information

Project Type: (state primary energy source: hydro, wind, biomass, solar) and/or whether CHP

Project Location: (mark the project location on a 1:50,000 map) [this will be attached to the PPA]

Installed generating capacity: kilowatt Export capacity: kilowatt

Expected annual energy dispatch: kilowatt hour

Target Commercial Operation Date: _____

3. Interconnection information:

- (a) Single-line Diagram of the grid interconnection: [attach a figure showing generators, circuit breakers, transmission line and protection equipment. See Guide for Interconnection of Embedded Generators to the Main grid and Isolated Mini-grids in Tanzania, for examples appropriate for the capacity of the power plant. Indicate capacities of generators, circuit breakers and lines]. The

Generating Company shall also provide the DNO with the proposed settings of all protection relays and switchgear.

(b) For synchronous generators, please provide the following (including shaded areas for generators above 500 kW in capacity):

Site Name

Location

Site Reference Number

Generating Company Name.....

Contact

Point of Supply (location)

Maximum export capacity

Maximum import capacity

Power factor operating range

Generator (for each synchronous generator):

Terminal voltage (kV)

Machine rating (MVA)

Stator resistance (pu)	tolerance %
Sub-transient reactance (pu)	tolerance %
Transient reactance (pu)	tolerance %
Synchronous reactance (pu)	tolerance %
Sub-transient time constant (ms)	tolerance (ms)
Transient time constant (ms)	tolerance (ms)

Transformer (for each generator transformer);

Rating (MVA)

Reactance (pu)

Resistance (pu)

Voltage Ratio vector group

Cable or Line between the Generator and Point of Common Coupling where this cabling distance exceeds 50 metres

Voltage (V)

Reactance (Ohm)

Resistance (Ohm)

4. Certification:

- a) I certify that neither I nor any other party connected to me have previously submitted an application for the registration of the same renewable energy project or resource described in this application
- b) I have read the “Guidelines for Developers of Small Power Projects (SPP) in Tanzania” and the “Guide for Interconnection of Embedded Generators to the Main Grid and Isolated Mini-grids, Tanzania”

Name of person signing this application _____

Signature _____

Date: _____
DD-MM-YYYY

Form 4 -- Form of Interconnection Certificate

(To be issued by the DNO to the Seller)

Interconnection Certificate

Issued on: **Valid from:** [date of Test Record]
Until: **[date three years from Test Record]**

Seller Name and Address:

Embedded Generating Plant Name and Address:

Site Reference Number:

This is to certify that upon a request made by the Seller, the INSERT NAME OF THE DNO ("DNO") has conducted the necessary inspection and testing of the interconnection of [name of embedded generating plant], to the DNO network, on [INSERT DATE].

The DNO is satisfied that [embedded generating plant] complies with the mandatory requirements specified in the "Guide for Grid Interconnection of Embedded Generating Plants in Tanzania " [dated (INSERT DATE OF GUIDE)].

The **Embedded Generator Test Record** is attached.

Exemptions, waivers or conditions allowed by the DNO are listed below.

- 1.
- 2.
- 3.

(signed by Managing Director of DNO or Authorised Nominee)

The originals of this Interconnection Certificate and the attachment are retained at [Seller's name and address or Embedded Generating Plant name and address]

Form 5 -- Registration Form for SPP Facility

Less Than 1 MW in Generation Capacity

Submit to:

THE UNITED REPUBLIC OF TANZANIA
Energy and Water Utilities Regulatory Authority (EWURA)
6th Floor, Harbour View Towers, Samora Avenue,
P.O. Box 72175, Dar es Salaam
TEL: +255-22-2123853; 2123854; 2123856; FAX: +255-22-2123180
Website: www.ewura.go.tz

For EWURA Use Only	
Date Received:	Docket Number:
Time Received:	Received by:

Name of registrant (Seller):

Certificate of Incorporation No:

Registration No

TIN No

VAT No

Physical and Postal address

Physical address: (Plot No., House No., Street)

Postal address:

Landline:

Facsimile:

Cellular Phone:

E-mail:

Website address:

Name of facility:

Location of facility:

Contact:

River/host facility (if applicable):

Exact connection point (feeder, pole or switch number):

Location of metering (meter number):

Nominal connection voltage:

Type of fuel: _____; type of generation technology: _____

Nameplate capacity rating: _____ kW

Expected capacity to sell: MIN _____ kW; MAX _____ kW

Capacity consumed by seller: MIN _____ kW; MAX _____ kW

Expected annual production: _____ kWh

Date of planned completed construction of facility:

**Form 6 -- Application Form for EWURA License for
Grid-interconnected SPP Greater than 1 MW in Installed Capacity**

Submit to:
THE UNITED REPUBLIC OF TANZANIA
Energy and Water Utilities Regulatory Authority (EWURA)
 6th Floor, Harbour View Towers, Samora Avenue,
 P.O. Box 72175, Dar es Salaam
 TEL: +255-22-2123853; 2123854; 2123856; FAX: +255-22-2123180
 Website: www.ewura.go.tz

For EWURA Use Only	
Date Received:	Docket Number:
Time Received:	Received by:

Section 1: Applicant and facility general information

Name of registrant (Seller):

Certificate of Incorporation No:

Registration №

TIN №

VAT №

Physical and Postal address

Physical address: (Plot No., House No., Street)

Postal address:

Landline:

Facsimile:

Cellular Phone:

E-mail:

Website address:

Name of facility:

Location of facility:

Contact:

River/host facility (if applicable):

Exact connection point (feeder, pole or switch number):

Location of metering (meter number):

Nominal connection voltage:

Type of fuel: _____; type of generation technology: _____

Nameplate capacity rating: _____ kW

Expected capacity to sell: MIN _____ kW; MAX _____ kW

Capacity consumed by seller: MIN _____ kW; MAX _____ kW

Expected annual production: _____ kWh

Date of planned completed construction of facility:

Section 2A – Technical and Managerial Competence	
<p>Is the Applicant a party to any civil suit or criminal case in Tanzania or in any other country?</p> <p><input type="checkbox"/> Yes: If Yes please give details on separate a sheet</p> <p><input type="checkbox"/> No:</p> <p>Is any affiliate/parent company/group member of the Applicant involved in any civil suit or criminal case in Tanzania or in any other countries?</p> <p><input type="checkbox"/> Yes: If Yes please give details on a separate sheet</p> <p><input type="checkbox"/> No:</p> <p>Have any of the Company Directors/ CEO detailed in section 1A have been involved in any entity where an Electricity licence has been revoked?</p>	
<p><input type="checkbox"/> Yes – Please give details on a separate sheet</p>	

No

Does the Applicant or any parent, holding, affiliate or associate company ever been convicted of any offence in Tanzania or any other countries over the past three years.

Yes – Please give details on a separate sheet
 No

FOR EWURA USE ONLY

Section 2B - The Project Description

Provide the detailed description of the project and attach the following.

Feasibility Study

Business Plan

Site maps

Land use plan

Design and as built drawings if some or all are not part of the Feasibility Study

Power Purchase Agreements/Power Off take Agreements/Power Sales Agreement/Power Export Agreement (if applicable)

Fuel supply agreements

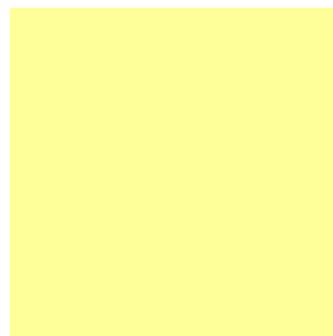
Any other agreement or arrangement which the applicant is a party

On a separate sheet provide project implementation time schedule if the same is not part of the documentation provided above.

FOR EWURA USE ONLY

List and attach evidence of all required consents/approvals issued by relevant authorities (Use separate sheet) e.g. Water right, local government (district) approval, land offer etc

On a separate sheet provide the Environmental Impact Assessment Study Report and Minister approval



Section 3 – Declaration by the Applicant

I(state name) being.....(state position/designation) hereby declare that I am authorized to make this application on behalf of the applicant and that to the best of my knowledge the information supplied herein is correct and that within a reasonable period of time after notice, I undertake to provide whatever additional information EWURA may require in order to evaluate this application.

SWORN/AFFIRMED at.....)
by the said.....who is identified to)
me by...../known to me personally)
the latter being known to me personally this) **DECLARANT**
.....day of2007)

BEFORE ME:

COMMISSIONER FOR OATHS

Form 7 -- Form for Annual SPP Reporting to EWURA

(for all SPPs, regardless of size)

Submit to:

THE UNITED REPUBLIC OF TANZANIA
Energy and Water Utilities Regulatory Authority (EWURA)
6th Floor, Harbour View Towers, Samora Avenue,
P.O. Box 72175, Dar es Salaam
TEL: +255-22-2123853; 2123854; 2123856; FAX: +255-22-2123180
Website: www.ewura.go.tz

For EWURA Use Only	
Date Received:	Docket Number:
Time Received:	Received by:

Name of registrant (Seller):

Certificate of Incorporation No:

Registration №

TIN №

VAT №

Physical and Postal address

Physical address: (Plot No., House No., Street)

Postal address:

Landline:

Facsimile:

Cellular Phone:

E-mail:

Website address:

Name of facility:

Location of facility:

Contact:

River/host facility (if applicable):

Exact connection point (feeder, pole or switch number):

Location of metering (meter number):

Nominal connection voltage:

Type of fuel: _____; type of generation technology: _____

Nameplate capacity rating: _____ kW

Expected capacity to sell: MIN _____ kW; MAX _____ kW

Capacity consumed by seller: MIN _____ kW; MAX _____ kW

Date of completed construction of facility:

Annual electricity production during the calendar year (January 1 to 31 December) 20__:

_____ kWh

Annual electricity sales during the calendar year (January 1 to 31 December) 20__:

_____ kWh

Amount of electricity sold to Distribution Network Operators _____ kWh

Amount of electricity sold to retail customers _____ kWh

Number of DNO customers _____.

Number of retail customers _____

Comments and Clarifications

**Form 8 -- Acknowledgment of Notification by
Local Government Official Unit of the Planned SPP Project
and Tariff Submission to EWURA**

I have hereby been notified that SPP developer _____ (insert name) will be filing a tariff to EWURA for approval for the sale of electricity directly to customers in the area in which I am an elected official. I understand that the tariff filing is expected to reach EWURA on or around _____ (DD/MM/YYYY). I understand that all affected persons have 21 days from the date EWURA receives the tariff filing in which to submit comments with EWURA.

I have signed each page of the tariff proposed tariff (attached).

All information, including comments on the tariff should be sent to:

Director General,
Energy and Water Utilities Regulatory Authority (EWURA) 6th
Floor, Harbour View Towers, Samora Avenue/Mission Street P.O.
Box 72175
Dar es Salaam, TANZANIA

The SPP facility information:

Name of facility:

Location of facility:

Site Reference Number (if also selling electricity to DNO/TANESCO):

Name of registrant (Seller):

Address:

Landline: _____ Facsimile: _____ Cellular Phone: _____

E-mail: _____ Website address: _____

The Declarant information and signature:

Declarant position (must be elected local government official) _____

Government institution:

Address:

Landline: _____ Facsimile: _____ Cellular Phone: _____

E-mail: _____

Signature of declarant:

Date