



## **MOBILISING FINANCE FOR INFRASTRUCTURE**

### **A STUDY FOR THE UK DEPARTMENT FOR INTERNATIONAL DEVELOPMENT (DFID)**

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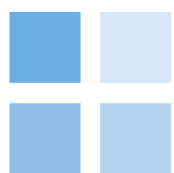
August 2015

**Ghana country case study**

Produced by:

**Cambridge Economic Policy Associates Ltd.**

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**CEPA**

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## **ACKNOWLEDGEMENTS**

This country report was produced by Cambridge Economic Policy Associates Ltd (CEPA) as part of research funded by the Department For International Development (DFID): Mobilising Finance for Infrastructure in Sub-Saharan Africa and South Asia.

The views expressed within it are those of CEPA and do not represent DFID's own policies or views. Any discussion of the content should therefore be addressed to the authors and not to DFID.

CEPA is grateful for comments on the research from Lily Ryan-Collins, Phil Outram, Andrew Maclean, Fernanda Ruiz- Nuñez, Fiona Stewart, Sameh Shenouda, Euan Marshall, Jay Koh, Brian Baxendale, Soumen Bagchi, Steven Lee, Sergio Dista and Paolo Craviolatti.

In addition, the overall research project has benefited from consultations with a wide number of stakeholders based across Sub Saharan Africa, India and elsewhere. CEPA would like to thank all consultees for their contributions to the report.

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## **ACRONYMS**

AFC	African Finance Corporation
AfDB	African Development Bank
AIIM	African Infrastructure Investment Managers
ATRCL	Arterial Toll Roads Company Limited
CCCP	Canada Climate Change Program
CMEC	China Machinery Engineering Corporation
DBSA	Development Bank of Southern Africa
DEG	German Investment and Development Corporation
DFID	Department for International Development
DFIs	Development Finance Institutions
EAIF	Emerging Africa Infrastructure Fund
ECG	Electricity Company of Ghana
EPC	Engineering, Procurement and Construction
FMO	The Netherlands Development Finance Company
GE	General Electric
GHA	Ghana Highways Authority
GIIF	Ghana Infrastructure Investment Fund
GoG	Government of Ghana
GWCL	Ghana Water Company Limited
ICF-DP	Infrastructure Crisis Facility – Debt Pool
IDC	South African Industrial Development Corporation
IFC	International Finance Corporation
IPPs	Independent Power Producers
LNG	Liquefied Natural Gas
MDAs	Ministries, Departments and Agencies
MICs	Middle Income Countries
MIGA	Multilateral Investment Guarantee Agency
MOF	Ministry of Finance
MOP	Ministry of Power
NEDCo	Northern Electricity Distribution Company
OFID	OPEC Fund for International Development

OPIC	Overseas Private Investment Corporation
PAIDF	Pan-African Infrastructure Development Fund
PFA	Project Finance and Analysis Unit
PID	Public Investment Division
PPA	Power Purchase Agreement
PPIAF	Public-Private Infrastructure Advisory Facility
PPPAU	PPP Advisory Unit
PPPs	Public-Private Partnerships
PURC	Public Utilities Regulatory Commission
REIPP	Renewable Energy Independent Power Producer Procurement Programme
SPV	Special Purpose Vehicles
SSA	Sub-Saharan Africa
SSNIT	Social Security and National Insurance Trust
TAQA	Abu Dhabi National Energy Company
TICO	Takoradi International Company
VRA	Volta River Authority

## **EXECUTIVE SUMMARY**

This report was produced by Cambridge Economic Policy Associates (CEPA) as part of a wide-ranging research programme funded by the Department for International Development (DFID) that explores the factors constraining the provision of private finance to support infrastructure investment in DFID's focus countries.

This report provides an overview of the market for infrastructure finance in Ghana (focusing on economic infrastructure sectors: energy, transport and water) using evidence gained from eighteen consultations held with stakeholders (in the period December 2014 to February 2015) and complementary desk-based research.

The study provides background on the key policy reforms implemented by the government of Ghana in an attempt to provide a framework more conducive for private finance; an overview of the main transactions that have taken place across the different infrastructure sectors; and then sets out the findings on the main factors constraining increased private finance for infrastructure drawing largely on the views of stakeholders.

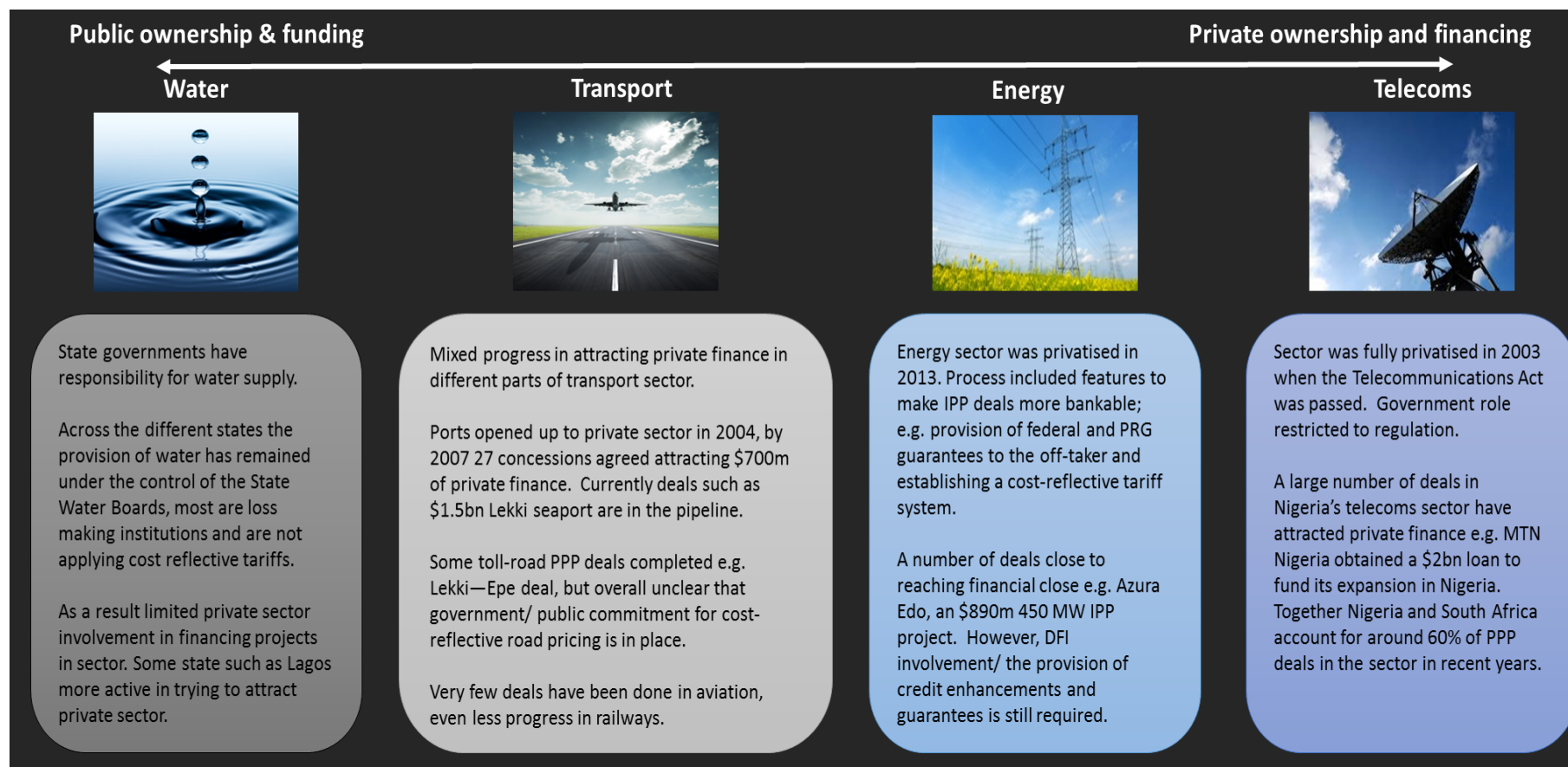
The findings of the analysis are summarised below.

### **Status of reforms and private finance transactions by sector**

For each of the main economic infrastructure sectors, the research reviewed the extent to which the different sectors have been able to attract private finance. Figure ES.1 gives a summary overview of the different sectors, while Figure ES.2 provides examples of some of the projects that have been able to attract private finance (or are in the process of doing so) across the different sectors.

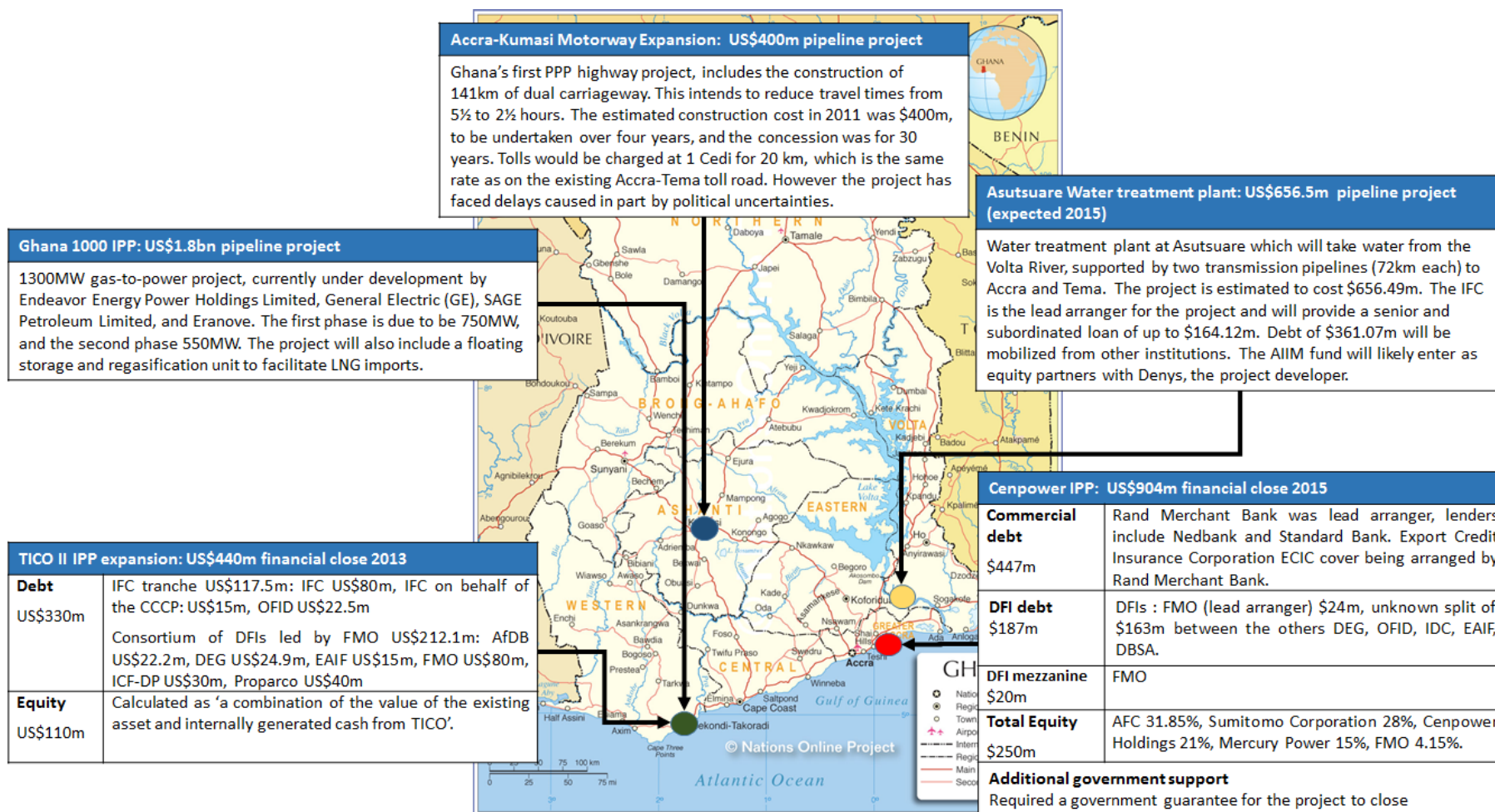
It is worth highlighting that there has been quite limited progress in increasing private participation in infrastructure; overall there remains a reliance on the provision of finance by DFIs and/ or the use of government/ development partner guarantees for deals involving the private sector to reach financial close.

Figure ES.1: Summary of progress in attracting private finance in economic infrastructure sectors<sup>1</sup>



<sup>1</sup> Telecoms analysis adapted from <http://www.budde.com.au> (no date) *Ghana - Key Statistics, Regulatory and Telecom Market Insights* and PPIAF (2012) *World Bank Telecommunications Sector Reform Engagement in the 2000s*

Figure ES.2: Examples of infrastructure projects that have received private finance<sup>2</sup>



<sup>2</sup> Map taken from [http://www.nationsonline.org/oneworld/map/ghana\\_map.htm](http://www.nationsonline.org/oneworld/map/ghana_map.htm)



While progress has been made in recent years, there is still a considerable need for increased infrastructure investment particularly in the energy, road and water sectors. This report also focuses on providing evidence on the main factors constraining the increased provision of private finance to those sectors.

The findings from the consultations were that the problems are due mainly to lack of bankable projects caused by factors such as government's limited political will to increase private sector engagement in infrastructure, the financial stability of key state-owned utilities and government's technical and financial capacity to develop projects (which in part leads to a reliance on unsolicited bids). Other constraints include the ongoing macroeconomic challenges that Ghana faces.

### **Limited political support for PPPs**

Consultees raised a number of issues surrounding the impact of the political cycle on PPP development. Ministers are driven by the electoral cycle, wishing to develop projects that can be completed during their time in office. While there are a number of public commitments supporting the principle of private sector participation there is less acceptance in practice. The findings suggest that this is because of the public sector's fear that this will lead to a loss of assets, control and patronage. As such, the political will to support projects or drive longer term policies is weak.

An election is planned for the end of December 2016, which may mean that the current framework for PPPs will change under a new government – an issue that is exacerbated by the adversarial two party presidential system. The importance of the electoral cycle means in the run-up to the election there is likely to be very few policy initiatives, which can slow down progress.

Leadership on PPPs is fragmented and the wide range of stakeholders involved slows down project development. One stakeholder described the current approvals and implementation institutional arrangements for PPPs in Ghana as 'totally dysfunctional'.

### **Finances and governance of utilities and state-owned enterprises**

While state-owned enterprises in the energy sector have much more experience working with private partners than is the case in other sectors, their ability to support more projects is constrained by financial and governance issues. This is partly attributed to the existence of tariff regimes that do not allow for full cost-recovery; inefficiency and distribution losses; plus non-payment by some large, government-owned organisations or politically influential industries. Despite these utilities being owned by the state, to date there has been an overall acceptance of poor operating efficiency and weak corporate governance of the utilities.

Such weaknesses can have a significant impact on private investment in the industry. Interviews suggested that industry returns for IPPs are around 18-23%, but if there is a build-up in arrears in payment from the off-taker, this reduces very quickly making private investment unattractive.

### **Low levels of government capacity for PPPs**

PPP capacity within the government is limited, and this restricts the ability to progress the pipeline of deals that have the potential to be bankable. While the PID has worked hard to develop a pipeline, the team is small, has relatively restricted powers and the procedures it must undertake are unduly complex. The capacity in other government departments is weaker, and as these departments are

responsible for driving the project development process this poses a real challenge and has slowed down the progress of PPPs in Ghana.

As a result, the majority of deals undertaken in recent years, and the majority of infrastructure PPP projects in the pipeline, are unsolicited projects. There is currently no clear strategy for how the government should manage unsolicited bids, with no effective “efficiency” scrutiny or benchmarking undertaken. All the deals to date have been sole sourced, meaning they are likely to be more expensive than if they were managed through public tender processes.

### **Recommendations emerging from the study**

Options for overcoming these constraints were identified during the discussions held. With regards to the enabling environment, it was emphasised that a medium to long strategic term plan for PPPs needs to be put in place, alongside a clear and well specified PPP Law. This law needs to be passed by parliament, together with an appropriate information plan. As part of this, the approval and implementation process for PPPs could be reformed, to make it easier to understand for new market entrants.

The government also needs to focus on becoming more systematic in its development of a PPP programme and less reliant on unsolicited bids (though a clearer, more consistent approach to dealing with unsolicited bids is also required). In the energy sector, a competitive, bid-out programme such as that undertaken for renewables in South Africa would help bring in power at the lowest cost and give the private sector and government confidence to invest in the required technical and financial skills.

Steps must also be taken to improve the finances of the state-owned utilities. In particular, progress on the Millennium Challenge Corporation compact is key to ensuring the Electricity Company of Ghana is credible as an off-taker.

With regards to project development, it was considered that DFIs could in the future play a larger role in early stage development. The government also needs to build up a public sector advisory team with more commercial experience, and could set up a project development facility. A viability gap fund could also be set up alongside, which would help overcome issues of projects not being commercially viable and facing funding gaps.

## 1. INTRODUCTION

This country study provides an overview of the market for private participation in infrastructure in Ghana in three key infrastructure sectors: independent power producer projects (IPPs) excluding renewables, roads, and water and sewerage.<sup>3</sup> It then sets out stakeholders' views on the key barriers to mobilising increased private finance in these sectors.

The evidence base for this study is based on seventeen consultations held with stakeholders (eleven in-country as part of the field visit held in the last week of January 2015, six held over the telephone in advance of the trip) and complementary desk-based research.

The report is structured as follows:

- Section 2 provides a short summary of the development of the investment framework in Ghana, considering the investment need in the country, the macroeconomic context for infrastructure development, the legal framework for private participation, and the government institutions involved in PPPs.
- Section 3 reviews the current status of private financing of infrastructure in Ghana. It includes examples of PPP deals that have been completed recently, identifies the main sectors/ type of deals in the pipeline and the key market players involved in infrastructure financing.
- Section 4 uses the findings of the in-country consultations to consider what factors are viewed as constraining the bankability of infrastructure projects in Ghana.
- Section 5 uses the findings of the consultations together with some desk-based research to review the issues around the available sources of finance for infrastructure and the key market players involved in infrastructure financing.
- Section 6 presents the conclusions.
- Annex A includes a list of consultees.
- Annex B provides project level case studies.
- Annex C includes references.

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<sup>3</sup> Telecoms are excluded from this analysis because no projects have been undertaken in the sector since 2008.

## **2. THE DEVELOPMENT OF THE INVESTMENT FRAMEWORK IN GHANA**

### **2.1. Infrastructure needs in Ghana**

The Ministry of Finance in Ghana estimates that the annual infrastructure gap in the country could be as much as US\$1.5bn a year over the next decade.<sup>4</sup> The African Infrastructure Country Diagnostic study concluded that if Ghana's infrastructure endowment were similar to other African Middle Income Countries (MICs), it would add 2.7% per annum to growth. It argues that there are major efficiency losses in power and water and that for infrastructure generally, reliability is poor. Improving regulation and cost recovery through a mixture of lower costs, reduced distribution losses and tariff reform would improve the climate for PPPs across the three sectors of IPPs, roads and water and sanitation.<sup>5</sup>

### **2.2. Current macroeconomic context in Ghana**

Ghana is a Lower Middle Income Country, where high rates of growth – averaging over 7% per annum - have been sustained in recent years. This was driven by expansion in the oil and gas markets (at a time of high prices), strong commodity prices, and a statistical rebasing of GDP.<sup>6</sup> However, growth has slowed to around 5 to 6% per annum in 2014, due to macroeconomic vulnerabilities and the Cedi lost over a third of its US dollar value over the same period.

Persistently high budget (e.g. 10% of GDP in 2014) and current account deficits constrain the ability of the government to invest more in infrastructure and dampen investors' confidence in the government's ability to meet its commitments. Public debt reached 58% of GDP in August 2014, excluding the stock of arrears and the debt of state-owned enterprises. If the public debt figure includes these two factors and the Eurobond issued in mid-September 2014, the stock of public debt would exceed 70% of GDP.<sup>7</sup> Interest and bond rates are also high. The fiscal space for financing public infrastructure is therefore highly constrained and further fiscal consolidation is likely.<sup>8</sup>

In August 2014, the Ghanaian government opened discussions around an IMF programme to support the country.<sup>9</sup> At the end of February 2015, a deal was agreed for US\$1bn. This includes a ceiling on the contracting or guaranteeing of new non-concessional external debt,<sup>10</sup> which could constrain the government's ability to invest in new infrastructure.

### **2.3. The legal framework for PPPs**

Ghana has a National Policy on PPP which was introduced and approved by the Cabinet in 2011.<sup>11</sup> The Public Investment Division (PID) of the Ministry of Finance (MOF) is responsible for the development

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<sup>4</sup> MOF (April 2014), *Ghana Public Private Partnership Programme (PPP) Newsletter: Issue 1*.

<sup>5</sup> MOF (April 2014), *Ghana Public Private Partnership Programme (PPP) Newsletter: Issue 1*.

<sup>6</sup> KPMG (2013), *Monitoring African Sovereign Risk: 2013 Quarter 1*; [bbc.co.uk](http://bbc.co.uk) (9 December 2012), *How to boost GDP stats by 60%*.

<sup>7</sup> World Bank (October 2014), *Ghana Economic Update*.

<sup>8</sup> IMF (May 2014 No. 14/129), *Ghana Country Report*.

<sup>9</sup> CitifmOnline.com (1 September 2014), *IMF bailout team storms Ghana this week*.

<sup>10</sup> IMF (April 2015) *Request for a three-year arrangement under the extended credit facility staff report; press release; and statement by the Executive Director for Ghana*.

<sup>11</sup> MOF (2014), *Frequently Asked Questions: Ghana Public Private Partnership (PPP) Programme*.

of the national Public Investment Policy and the implementation of the National PPP Programme.<sup>12</sup> The PID remit includes both national and subnational projects; however while the National Policy covers the energy sector, to date the PID has played less of a role in that sector.

The National Policy on PPP 2011, outlines the PPP process for both government-originated and unsolicited PPP projects, with unsolicited PPP projects required to be outside of the existing project list (pipeline) and demonstrate ‘substantial innovation’ in support of public policy.<sup>13</sup> It also outlines the guiding principles and scope of PPPs in Ghana, the roles and responsibilities of the parties involved in the PPP process, and provides guidance timelines for steps in the process of project development (i.e. approvals, and preparation of documentation).

The proposed PPP Law goes into greater detail and includes considerations such as dispute resolution procedures. Stakeholders suggested that the PPP Law has gone through a major revision to reflect the advice of the Attorney General. The law includes a brand new institutional structure for implementation, and has been significantly reduced in size and made simpler to follow. However, the new draft does not appear to be publicly available. It is worth noting that the PPP law has been progressing through the legislative process since 2010.<sup>14</sup>

#### **2.4. The government of Ghana institutions active in PPPs**

The first formalised PPP initiatives were sponsored under the then Ministry of Private Sector Development in 2003, and the Cabinet approved “Policy Guidelines for Implementation of PPPs in Ghana” in 2004. These were not effective as they lacked a legal instrument and were not well known by line ministries.<sup>15</sup>

The Public-Private Infrastructure Advisory Facility (PPIAF) and the World Bank (WB) supported a major PPP diagnostic study in 2008/9 and a comparative regional analysis; this led to the emergence of the MOF as the central champion; it took a lead role in the building of an appropriate enabling environment and the creation of the PID as the gatekeeper. PID also created the Project Finance and Analysis (PFA) Unit for upstream investment screening and approval and the PPP Advisory Unit (PPPAU), for transactions and advisory support to line ministries, agencies and other government institutions. This institutional development and capacity building was supported by development partners, including DFID.

A wider range of institutions also play a key role in the development of PPPs in Ghana, as listed in the National Policy on PPPs. These are summarised in the box below.

##### *Box 2.1 Key institutions for PPPs in Ghana*

###### **Institutions with key roles in Ghana’s PPP arrangements**

- The Ministry of Finance and Economic Planning through relevant divisions/units, including:
  - Public Investment Division
  - The Project and Financial Analysis Unit
  - The PPP Advisory Unit

<sup>12</sup> MOF (2014), *Frequently Asked Questions: Ghana Public Private Partnership (PPP) Programme*.

<sup>13</sup> MOF (2011), *National Policy on Public Private Partnerships (PPP)*.

<sup>14</sup> ModernGhana.com (17 September 2010), *Government and stakeholders discuss Draft PPP Policy*.

<sup>15</sup> Apenteng, M (2011), *Public Private Partnership (PPP) In Ghana*.

## Institutions with key roles in Ghana's PPP arrangements

- Debt Management Division
- The Budget Division
- The Legal Division
- The National Development Planning Commission
- Government Contracting Authorities. This includes Ministries (such as the Ministry of Transport, Ministry of Water Resources, Works, and Housing), Departments and Agencies (such as the Highways Agency and the Railways Development Authority) and Metropolitans, Municipalities and District Assemblies
- Public Procurement Authority
- Ministry of Trade and Industry
- Cabinet
- Parliament
- PPP Approval Committee
- Attorney General's Department
- Regulatory Authorities (e.g. Public Utilities Regulatory Commission (PURC), Water Resources Commission, Ghana Railway Development Authority etc.)

*Source: MOF, (2011) National Policy on PPPs*

In July 2014, Parliament passed the Ghana Infrastructure Investment Fund (GIIF) bill to enable the implementation of a new public body. The GIIF will mobilise financial resources from VAT, government budgets, reflows, development partners and other sources, to act as a strategic partner with the private sector to invest in "commercial" infrastructure (what is covered by this term has not been specified to date). It eventually intends to gain a credit rating, and operate through special purpose vehicles (SPVs), PPPs, mortgages and leases; it also has the power to issue bonds. The aim is to have a diversified portfolio of infrastructure projects that provide a platform for continued growth and transformation; it reflects the pressures on the available fiscal resources to meet Ghana's infrastructure needs. However these pressures are likely to limit the Fund's initial capitalisation, which was estimated at Cedi 500m (US\$140m) in the local press during the field visit.

### 3. ANALYSIS OF PPP TRANSACTIONS BY SECTOR

This section sets out the key actors and projects undertaken in Ghana, providing summary evidence from the database developed as part of this project. It then turns to private finance developments in the focus sectors: energy, transport and water, before drawing conclusions on potential future developments within these sectors.

#### 3.1. Summary of PPP transactions in Ghana

The table below shows that since 2005 eight PPP projects have reached financial close in Ghana across the energy, transport and water and sewerage sectors, for a total value of US\$2.98bn. These are presented in Table 3.1 below.

*Table 3.1 Projects that have reached financial close in Ghana since 2005, all in US\$m*

Project name	Close year	Project type	Project status	Total cost	Finance provided			
					DEBT	MEZZ.	EQUITY	GRANTS
Cenpower	2014	Electricity generation	Financial close	904	634	20	250	0
TICO II Expansion	2013	Electricity generation	Operational	440	330	0	110	0
Befesa Desalination Plant	2012	Water treatment plant	Construction	126	88	0	38	0
Tema Osonor Plant Limited (later CENIT Energy Ltd)	2009	Electricity generation	Operational	140	109	0	35	0
Sunon-Asogli Gas Fired Power Plant <sup>16</sup>	2007	Electricity generation	Operational	560	0	0	560	0
Osagyefo Power Barge	2007	Electricity generation	Distressed	100	0	0	0	0
Ghana Water Company Limited (Management contract)	2005	Water & sewerage	Concluded	120	5	0	12	103
West African Gas Pipeline Company Ltd <sup>17</sup>	2005	Natural gas transmission	Operational	590	0	0	0	0
<b>Totals</b>				<b>2,980</b>	<b>1,165</b>	<b>20</b>	<b>1,004</b>	<b>103</b>

*Source: Expanded PPI database. Please note the financing information presented is only what is available from public sources and this list may not reflect all projects that have reached financial close.*

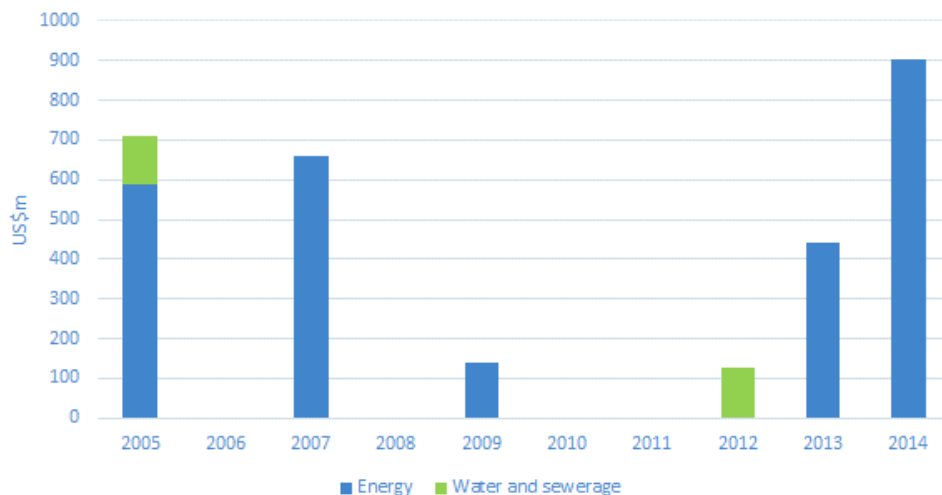
Energy accounts for all but two of the eight projects undertaken in the last ten years. Water accounts for the remaining two projects, but only 10% of the total value. No transport PPP project has been

<sup>16</sup> Stakeholders suggested that this plant was split into a US\$200m phase I and a US\$360m phase II, the latter of which is still in development. Unfortunately, this conflicts with the two main sources used – the PPI database and IJ Global showing this as one project. For consistency with the rest of the database the US\$560m figure has been left here, though in practice there might be two phases of construction.

<sup>17</sup> Please note that WAGP is a regional project with Nigeria. This is discussed in more detail in the regional study for this report.

undertaken in Ghana since 2003.<sup>18</sup> Before 2005 two Rehabilitate- Operate- Transfer projects were undertaken for the Port of Tema and for the Tema Container terminal (2000 and 2003 respectively).<sup>19</sup> The figure below shows the sector breakdown of infrastructure projects that have reached financial close in the last ten years.

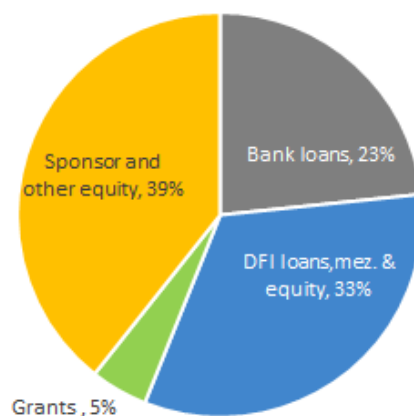
Figure 3.1 Total cost of PPP projects undertaken in two focus infrastructure sectors in Ghana, 2005-2014



Source: Expanded PPI database. Please note no transport projects have been undertaken since 2003.

Financing for the projects that have reached financial close in the last ten years, has come from a range of sources, as summarised below.

Figure 3.2 Sources of financing for energy and water projects, 2005-2014



Source: Expanded PPI database. Please note no transport projects have been undertaken since 2003.

Sponsors and other sources of equity have accounted for 40% of the financing, approximately US\$900m. Though US\$560m of this comes from one transaction, the Sunon-Asogli Gas Fired Power

<sup>18</sup> It is understood that a roads concession was let in Ghana in 2005. However, to date there is very limited information on this.

<sup>19</sup> Expanded PPI database.



Plant that closed in 2007.<sup>20</sup>

The Development Finance Institutions (DFIs) are otherwise playing the largest role in the market, and are responsible for US\$748m of the US\$2.3bn finance provided to the projects between 2005 and 2014. Of this, US\$623m of DFI finance was provided in the form of debt. The commercial banks have provided US\$534m of debt over this same period. However, this figure is also significantly skewed by one project - the provision of US\$447m of commercial bank debt to the Cenpower IPP project in 2014. Cenpower is a particularly interesting project in Ghana, due to its high levels of commercial bank investment and the complexity of taking the project to close.

### Box 3.1 Cenpower IPP

Cenpower IPP	
Cenpower is a 340MW gas-fired IPP plant near Tema. It was developed by InfraCo Africa with local developers Cenpower and later the African Finance Corporation. The financing structures for the project are summarised below.	
Finance type	Finance source
<b>Commercial debt</b> \$447m	Rand Merchant Bank was lead arranger, lenders include Nedbank and Standard Bank. Export Credit Insurance Corporation ECIC cover being arranged by Rand Merchant Bank.
<b>DFI debt</b> \$187m	DFIs : FMO (lead arranger) \$24m, unknown split of \$163m between the others DEG, OFID, IDC, EAIF, DBSA.
<b>DFI mezzanine</b> \$20m	FMO
<b>Total Equity</b> \$250m	AFC 31.85%, Sumitomo Corporation 28%, Cenpower Holdings 21%, Mercury Power 15%, FMO 4.15%.
The project began its development in 2003 and reached close in late 2014. It faced many challenges throughout the project development period, in part due to challenges negotiating a bankable power purchase agreement with the Electricity Company of Ghana (ECG). As a result of the lengthy development process and the fact that Cenpower was the first full project-financed IPP in Ghana, the pre-construction costs, including fees, of this project were estimated to be 10% of the total project cost - US\$75m.	
A full case study on this project is provided in Annex A.	

If Cenpower is excluded, bank loans are responsible for only 6% of the financing provided to projects in the energy and water sectors over this period. This reflects the conclusions of the analysis, developed in the inception phase of this study, that DFIs dominate the financing of infrastructure projects from 2005 to present in Sub-Saharan Africa (SSA). An example of a project that was reliant on DFI finance is discussed in Box 3.2 below.

### Box 3.2 TICO II expansion

TICO II expansion	
TICO II is an expansion project based at an existing power generation facility at Aboadze, a small town some 15 km north west of Takoradi in Western Ghana. It involves the 110 MW increase of the existing 220 MW simple cycle plant that has been operational since 2000.	
Finance type	Finance source
Debt US\$330m, 75%	IFC tranche US\$117.5m: IFC US\$80m, IFC on behalf of the CCCP: US\$15m, OFID US\$22.5m

<sup>20</sup> Expanded PPI database. Please note comment under footnote 20 above.

TICO II expansion	
	Consortium of DFIs led by FMO US\$212.1m: AfDB US\$22.2m, DEG US\$24.9m, EAIF US\$15m, FMO US\$80m, ICF-DP US\$30m, Proparco US\$40m
Equity US\$110m, 25%	Calculated as 'a combination of the value of the existing asset and internally generated cash from TICO'. <sup>21</sup>

This project only received debt from international DFIs, and thus is a strong example of the second model of infrastructure financing, which is presented in the synthesis report. The structure used to finance the IPP is classic for this type of project finance. The project financing began when the plant was still owned by CMS in 2005, though failed to close.

A full case study on this project is provided in Annex A.

### 3.2. Analysis of current project pipeline

The current PID pipeline is around 22 projects – however, only six of these are relevant to this study. Stakeholders suggested that the first PID projects are likely to reach the procurement stage in 2015-2016. These projects are being procured individually, rather than as a programme, and selected projects are receiving support from WB funded transaction advisors. These projects are being developed by the respective implementing Ministries, Departments and Agencies (MDAs), with support from the PID, and will be competitively bid out to private companies.

A large number of projects are being developed by private companies as unsolicited proposals outside of the PID pipeline. There are around 20 unsolicited projects for which Power Purchase Agreements (PPA) have been reportedly been signed or initialled by the off-taker. Furthermore, the Ghanaian Energy Commission has issued over 30 thermal IPP licenses, and 60 licenses for renewable energy projects. There is more limited information on these projects in the public domain.

Table 3.2 below summarises the pipeline of infrastructure projects in development in Ghana as of early 2015. This is split into the projects being developed by the government, and those other projects understood to be in development from unsolicited proposals. Due to the early stage of many of the pipeline projects, the financial information available is limited.

Table 3.2 Current project pipeline

Project	Stage†	Estimated cost	Sector	Type of PPI
<b>PID pipeline projects</b>				
Accra-Takoradi Highway Dualisation <sup>15</sup>	Early stage	US\$600m	Roads	Concession
Asutsuare Bulk Water DBFO Project <sup>15</sup>	Late stage	US\$565m	Water & sewerage	Greenfield
Boankra Inland Port / Eastern Railway Line project <sup>15</sup>	Early stage	US\$900m - 1.5bn	Rail / Inland port	Concession
Sogakope-Lome Trans Boundary Water Supply Project <sup>22</sup>	Early stage	N/A	Water & sewerage	Greenfield

<sup>21</sup> PIDG (2013), *Annual Report 2013*, pp. 92-93.

<sup>22</sup> AfDB (2013), *Request for expressions of interest (consulting services): Sogakope-Lome Trans Boundary Water Supply Project*.

Project	Stage†	Estimated cost	Sector	Type of PPI
Takoradi Port Rehabilitation and Expansion <sup>23</sup>	Late stage	US\$750m	Ports	Concession
Accra-Tema Motorway Expansion <sup>15</sup>	Late stage	US\$200-350m	Roads	Concession
<b>Pipeline projects outside of the PID</b>				
155MW Ghana Nzema Solar PV Project <sup>24</sup>	Late stage	US\$400m	Energy	Greenfield
225MW Ayitepa Wind Farm <sup>25</sup>	Late stage	US\$525m	Energy	Greenfield
190 MW Aboadze Amandi Energy Gas Fired Plant <sup>26</sup>	Early stage	US\$528m	Energy	Greenfield
28MW Solar PV Plant*	Early stage	US\$60m	Energy	Greenfield
360MW Aboadze Jacobson Jelco Gas Fired Plant <sup>27</sup>	Early stage	US\$637m	Energy	Greenfield
Accra-Kumasi Motorway expansion <sup>28</sup>	Late stage	US\$400m	Roads	Concession
Ghana 1000 <sup>29</sup>	Late stage	>US\$1bnn	Energy	Greenfield
Takoradi Port Expansion- Phase 1 PPP	Early stage	US\$197m	Ports	Concession
Ghana LNG Import Terminal	Late stage	US\$500m	Transport	Greenfield
Kotoka International Airport Redevelopment <sup>30</sup>	Late stage	N/A	Airport	Concession
Volta Lake Transport Corridor Project	Early stage	N/A	Transport	Other
Tema Port concession*	Late stage	N/A	Ports	Concession
Prampram New International Airport <sup>31</sup>	Early stage	N/A	Airports	Greenfield

\*From consultations.

†Early stage covers from project origination to feasibility; late stage covers from structuring to close.

These projects cover a wider range of sectors, including Liquefied Natural Gas (LNG) import, wind and solar energy projects and rail.

According to stakeholders another sector in which there may be significant project development in the future is bioenergy, as there are key opportunities surrounding urban waste disposal, as well as using by-products from the rubber and cocoa industries. Currently, pilot projects are being supported by UNIDO and the Republic of Korea.<sup>32</sup>

Compared to projects that have reached financial close to date, the pipeline contains some much larger projects – most notably, Ghana 1000. A brief summary of this project is provided below.

<sup>23</sup> MOF (2014), *Pipeline Projects: Ghana Public Private Partnership (PPP) Programme*.

<sup>24</sup> IJGlobal.com Project Database (Accessed February 2015), *155MW Ghana Nzema Solar PV Project*.

<sup>25</sup> IJGlobal.com Project Database (Accessed February 2015), *225MW Ayitepa Wind Farm*.

<sup>26</sup> IJGlobal.com Project Database (Accessed February 2015), *190MW Aboadze Amandi Energy Gas Fired Plant*.

<sup>27</sup> IJGlobal.com Project Database (Accessed February 2015), *360MW Aboadze Jacobson Jelco Gas Fired Plant*.

<sup>28</sup> Arterial Toll Roads Company (Accessed January 2015) *'The Road to Ghana: a toll road infrastructure PPP case study.'*

<sup>29</sup> Ghana Web (20 November 2014), *'Ghana 1000' on course – GE*.

<sup>30</sup> Hon. Rashid Pelpuo, the Hon. Minister for Private Sector Development (Accessed January 2015), *Ghana's public private partnership investment opportunities*.

<sup>31</sup> President John Mahama (September 2014) *Ground Breaking Ceremony to Upgrade & Expand Tamale Airport*. Some sources suggest that the Tamale Airport upgrade was undertaken as a PPP but this is not clear.

<sup>32</sup> Graphic.com.gh (Feb 2014) *Turning waste to energy: Ghana struggles to replicate old tech*.

### Box 3.3 Ghana 1000

#### Pipeline project: Ghana 1000

Ghana 1000 is a 1,300MW gas-to-power project, currently under development by One Energy, a joint development agreement between: Endeavor Energy Power Holdings Limited (Endeavor Energy), General Electric (GE), SAGE Petroleum Limited, and Eranove. The first phase is due to be 750MW, and the second phase 550MW. The cost of Phase I is estimated at US\$1.8bn, with a 75:25 debt to equity split. The project will also include a floating storage and regasification unit to facilitate LNG imports.

The pipeline projects identified come from a wider range of project originators as well – in particular, six of the projects listed have been developed by the Ghanaian government, though these are at relatively early stage. A number of municipal projects – including shopping malls, pedestrian bridges and public conveniences are currently going through the tendering process, though these are outside the scope of this project.

Nevertheless, the majority of the projects identified (presented as the ‘other pipeline projects’) have been developed by the private sector and are sole sourced, and where bid assessment will be undertaken through negotiation.

Stakeholders suggested that political interests dominate the decision of what projects will be taken forward and there is a risk that a change of government removes support for projects that have been in development for some time. The slow progress of the development of IPPs has been one of the reasons why the government has had to resort to temporary power sources – though these are expensive. As shown by the experience with the Osagyefo Power Barge, which faced problems that eventually led to dispute and arbitration.<sup>33</sup>

### 3.2.1. Electricity generation

#### Key actors

The only subsector of the energy sector in Ghana open to private sector participation is generation through IPPs. This is the focus of this section.

IPP projects are the responsibility of the Ministry of Power (formerly the Ministry of Energy and Petroleum). The Energy Commission is also active in IPPs as it provides licenses for electricity wholesale supply. The Public Utility Regulatory Commission (PURC) regulates the tariffs that ECG can set for its customers. The PURC also allows ECG to include PPA costs within its tariff base.

However the government’s main role in IPPs is to purchase power; two organisations have the ability to do so:

- The Volta River Authority (VRA), the national generation company, which until recently was also responsible for supplying and distributing electricity to the Northern Region of Ghana through a company called NEDCo. NEDCo has now become an independent corporate entity, though its financial autonomy is not clear.
- The Electricity Company of Ghana (ECG), the main distribution company.

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<sup>33</sup> Graphic.com.gh (4 April 2014), *Ghana now in control of Osagyefo Barge as dispute ends in The Hague*.

ECG is currently receiving support from the Millennium Challenge Corporation (MCC) as part of its Second Compact.<sup>34</sup> The MCC Compact has two elements, the first being to change the governance and management of ECG by bringing in a private sector operator. This has led to concerns being raised in the local media that the company will be privatised. This has been refuted by the government.<sup>35</sup> Following on from the draft report, it appears that the MCC compact has been agreed.

The second element of the compact is to increase investment in infrastructure. This intends to reduce technical losses that are caused by inadequate equipment capacity and obsolete cables, reduce commercial losses caused by illegal connections, metering problems, billing and collection challenges, and to improve service quality.<sup>36</sup>

## Developments in the sector

The Ghanaian market has an increasing demand for electricity; its current sources of generation cannot keep up, especially as its previous sources of cheap electricity – such as the Akosombo, Bui and Kpong Dams – have in recent years been unable to provide electricity reliably, due to low water levels. In addition, the gas expected to flow from Nigeria through the West African Gas Pipeline has not materialised to the extent envisaged.<sup>37</sup> Of the fossil fuel plants that exist, some have struggled with maintenance issues - such as TICO II, discussed in Annex A.

Five IPP projects have been developed since 2000, and the Energy Commission has provided 30 licenses to develop IPPs to unsolicited bidders. However, at this stage, it is not obvious how many of these will be developed into projects.

A new focus has been in the development of LNG terminals and plants. However, there are three major competing generation schemes but only the market space for one.

Another emerging area of development in Ghana is in the renewables space, where a similar ‘open market’ approach has been taken. This is now posing a challenge to the ministry, who have recently applied a 20MW ex post cap to solar projects in development.<sup>38</sup> Stakeholders highlighted that while this is temporary, it creates uncertainty for those who had already invested in the market.

The financial strength of the state-owned enterprises in the energy sector is a serious constraint for the ability of IPPs to attract private finance. Projects have had to rely on the provision of guarantees by the government; however the Ministry of Power has committed to provide no more guarantees to IPPs in Ghana. The stakeholders consulted suggested that they do not believe that this commitment is credible. Nevertheless, the ability of the government to provide more guarantees would likely be constrained by the IMF programme, which may prohibit contingent liabilities.

Electricity generation is the sector in Ghana which may have the most potential to move towards increased private sector engagement, considering its track record, pipeline, and need. However, the challenges facing the market suggest that progression will not be straightforward. There is a risk that the unstructured way that IPPs have been allowed to develop in the market, with too many developers chasing limited opportunities (as has been the case with the proposed LPG terminal), the funding

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<sup>34</sup> A separate element of this compact is providing similar support to NEDCo.

<sup>35</sup> Myjoyonline.com (28 July 2014), *ECG not for sale- Gov't*.

<sup>36</sup> IMANI News Room, IMANI Center for Policy & Education (13 September 2014), *Electricity Privatization Conundrum—ECG Is Not For Sale*.

<sup>37</sup> Ghana Web (20 Feb 2015), *CONFIRMED: 10 'Kufuor power plants' rented to Sierra Leone for \$25k/month*.

<sup>38</sup> IJ Global (24 Apr 2015) *Ghana caps solar investment*

constraints, and the ongoing macroeconomic challenges will hinder further private investment in the sector.

### 3.2.2. Roads

#### Key actors

Two road projects are in the PID pipeline, though these are both at an early stage. A summary of the available information on the current structure of road funding in Ghana and the relevant organisations is provided below.<sup>39</sup>

The main method for maintaining roads in Ghana is the Road Fund, which was set up to improve the maintenance and capacity of the country's roads. The Road Fund's revenues come from a fuel levy, international transit fees, road tolls, and vehicle registration and road user fees. To date, most new investments have been funded by donors rather than through the Road Fund.

The Ghana Highways Authority (GHA) collects all tolls on selected trunk roads, which between January 2008 - June 2010 provided 5% of the Fund's revenues. There are 38 toll stations throughout the country.<sup>40</sup> There is substantial revenue loss from the toll operations, due to delayed or non-payment of tolls, inappropriate use of free toll tickets provided for official use and robberies at toll booths, but the small contribution to the Road Fund is also due to low toll rates. Changes in tolls require parliamentary approval, and there is a reluctance to increase tolls for electoral reasons.<sup>41</sup> Toll rates were increased in 2010, for the first time in 11 years and there were protests by road users, although the tolls are low by international standards.

Operation of the 27 tollbooths was passed to 17 private contractors in 2005. While this increased monthly revenues from tollbooths from Cedi 250,000 (approximately US\$72,000) to Cedi 2.9m (approximately US\$0.5m),<sup>42</sup> the operation of the booths was returned to the GHA in September 2009.<sup>43</sup>

The Road Fund provides 60% of the country's annual road maintenance requirements. The overall lack of funds has resulted in poor maintenance and late payments to contractors. In July 2013 the Ministry of Roads and Highways announced that it would halt the award of new road construction contracts because of its outstanding debts to contractors, estimated at US\$185m.<sup>44</sup> However, the PPP contracts on the PID pipeline appear to still be in development.

#### Conclusions on developments in the market

Some stakeholders suggested that the PPP project with the most potential to move forward in the roads sector is thought to be the Accra-Takoradi highway project, currently at the feasibility stage. The pre-feasibility study was undertaken by Rebel Group of the Netherlands in 2014. However, this project is likely to be expensive and its preparation has already been protracted.

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<sup>39</sup> This section draws on: Brocklebank, P (2014), *Private Sector Involvement in Road Financing*.

<sup>40</sup> [www.dailyguideghana.com](http://www.dailyguideghana.com) (2014) *Roads Tolls Fetch Gh¢49m*.

<sup>41</sup> Brocklebank, P (2014), *Private Sector Involvement in Road Financing*.

<sup>42</sup> PPIAF (December 2011), *PPIAF Assistance in Ghana*.

<sup>43</sup> Brocklebank, P (2014), *Private Sector Involvement in Road Financing*.

<sup>44</sup> Brocklebank, P (2014), *Private Sector Involvement in Road Financing*.

Though roads are a key sector for development through the PID pipeline, and a significant demand for new and improved transport links, the market development is at a very early stage and the information available is limited. One stakeholder suggested that there is no clear policy or drive in the roads sector, with ongoing maintenance challenges and struggling efforts to name and sign post all roads in Accra providing examples of this.<sup>45</sup>

The challenges facing the market in recent years remain unresolved, tariffs are too low leading to insufficient funding to maintain roads as required. Given the fiscal difficulties faced by government they are finding it increasingly difficult for the government to pay contractors. In addition, there is an ongoing public opposition to tolls. As an indication of this, the University of Ghana tried to construct and operate a toll road on its land, which stakeholders suggested would have had benefits to local traffic. However the public outcry that ensued led to the tolls being dropped.<sup>46</sup>

### 3.2.3. Water

#### Key actors

The main actor in the sector is the Ghana Water Company Limited (GWCL). Between 2006 and 2011 this company was run through a management contract with Aqua Vitens Rand Limited (AVRL). This was reportedly financed through an IDA World Bank Urban Water Project via a US\$6.5m budget line.

The performance of the private sector operator was mixed but a sharp increase in tariffs plus continuing water supply and quality problems combined with popular resentment and political opposition eventually led to the contract not being extended.<sup>47</sup> After a short period of uncertainty, GWCL now runs itself and the Ministry is reconsidering its policy options, including the potential introduction of prepaid meters.

The GWCL continues to face a number of problems. In 2013, the Managing Director noted that the company was facing “institutional, administrative, managerial, operational and financing crises.”<sup>48</sup> A high proportion of output being non-revenue water, either lost via leaks or siphoned off or unpaid. Other issues noted were low tariffs, political interference, lack of investment in water supply or treatment plus power outages. Urban access to potable water at affordable rates remain front line political issues. The World Bank created the Urban Water Project to try and address these access and capacity issues while also promoting private sector involvement. A US\$50m extension was recently agreed; the key objectives remain improving access and reliability and improve the financial sustainability of GWCL.<sup>49</sup>

#### Conclusions on the development in the market

There is a high need for more investment in the water sector in Ghana. The water supply coverage is expected to be 72% in 2015 missing the 85% national target. The situation in sanitation is more

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<sup>45</sup> [www.myjoyonline.com](http://www.myjoyonline.com) (Nov 2013) *Complete street naming exercise by Sept. 2014 or lose your job - Mahama tells MMDCEs.*

<sup>46</sup> Graphic.com.gh (21 February 2014), *University of Ghana suspends road tolls.*

<sup>47</sup> World-PSI.org (21 September 2011), *Aqua Vitens hands over operations back to Ghana Water Company.*

<sup>48</sup> GhanaNewsAgency.org (3 August 2013), *GWCL MD catalogues problems facing company.*

<sup>49</sup> This section has been adapted from: PPIAF (December 2011), *PPIAF Assistance in Ghana.*

challenging. The proportion of people using improved sanitation facilities is only 14%, compared to the 2015 target of 54%.<sup>50</sup>

A water project recently closed is the Befesa desalination plant. A consortium led by Abengoa, a Spanish construction company, reached financial close in 2012. Standard Bank fully underwrote the US\$88m 12-year debt facility for the US\$126m project. The Multilateral Investment Guarantee Agency (MIGA) provided a US\$179m guarantee covering the debt and equity commitments. However, this project is unlikely to be replicated as the government has ruled out further desalination.<sup>51</sup> The project is not yet operational, and it is not clear how the viability funding issues faced by the Asutsuare project (see below) have been overcome.

Another water project, included on the PID pipeline, is in the final stages of project development. This is a project to implement a water treatment plant at Asutsuare which will take water from the Volta River.<sup>52</sup> The project is estimated to cost US\$660m. IFC is the lead arranger for the project and will provide a senior and subordinated loan of up to US\$164m, and the GWCL is supportive of the project. However, stakeholders suggested the project is likely to require some form of viability gap funding, as the tariff proposed (though this has not been approved by the government) will most probably be too high given the current level of retail tariffs. Where the funding to cover this gap is not clear, though it may be possible to obtain World Bank or AfDB support.

PPPs are also occurring at the municipal level in the water sector in Ghana, with the PPIAF's Sub-National Technical Assistance Programme working with the municipal government to consider PPP options to improve the provision of public toilets in Kumasi.<sup>53</sup>

While two PPPs have been developed in the Accra area in recent years, and the need for improved service provision in Ghana is significant, without cost-reflective tariffs it is not clear how PPPs will develop in the sector. The experience in the sector between 2005 and 2011 suggests that there is entrenched civil society and political opposition to private involvement in the water sector.

### **3.3. Market participants**

This section sets out the types of market participants currently interested in infrastructure investments in Ghana.

#### **3.3.1. DFIs**

Active DFIs in Ghana include the IFC, the German DFI (DEG), the Development Bank of Southern Africa (DBSA), the African Finance Corporation (AFC), the Dutch DFI (FMO), the AfDB, the French DFI (Proparco) the Emerging Africa Infrastructure Fund (EAIF) and the South African Industrial Development Corporation (IDC). There are a number of different groupings of DFIs, all of which have different approaches in Ghana.

The European DFIs work closely together and from the discussions held as part of the field visit, it appears that FMO is the most active of this group at lead syndication throughout the region. Within

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<sup>50</sup> Adank, M. and Kumasi, T. (January 2013), *Sustainability Index of WASH Activities: Ghana Country Report*.

<sup>51</sup> Global Water Intelligence (Vol 13 Issue 11, November 2011), *Ghana rules out further desalination*.

<sup>52</sup> Ghana Ministry of Finance (Accessed November 2014), *Pipeline projects: Ghana PPP Programme*.

<sup>53</sup> PPIAF (Accessed February 2015), *Ghana: Assessing PPP Options to Improve the Provision of Public Toilets in Kumasi*.



Ghana, they have supported the Cenpower IPP and the Tema Osonor project in 2009.<sup>54</sup> This was later taken over by the Ghanaian pension fund, SSNIT, who completed the construction, though not on a project finance basis. This project – now called CENIT – and SSNIT’s role is discussed below.

The IFC is also active in lead syndication, indeed its mandate often requires that it takes the lead role. The IFC is involved in Asutsuare Water and have a number of advisory mandates, including for the airport and railway projects, and potentially the Accra-Takoradi Motorway expansion. They were initially involved in the Cenpower deal, but the discussions held suggest the IFC wanted the deal to be restructured so this involvement fell through.

The AfDB also often have a lead syndication role in SSA deals, but its involvement in Ghana appears to currently be relatively small, supporting only two projects in the last five years.<sup>55</sup> The Korean and Japanese DFIs also work differently, and there is an emerging group of African DFIs, such as AFC, DBSA and the South Africa IDC that have been involved in the Cenpower project. There is also a cluster of mainly US energy companies in the complementary Africa Power and MCC/ USAID programmes; these normally also include OPIC and DCA.

DFIs are playing a large role in the provision of debt in the Ghanaian market, as is shown in Figure 3.2 above. There is no evidence that any of the DFIs are reaching their country financing limits in Ghana, and consultees suggested that generally if there are good projects, then there is DFI financing available to support these. Individual DFIs also report strategic sector or thematic preferences, such as renewable energy or community based infrastructure with an emphasis on improving access.

The consultees suggested a key constraint for DFIs is the availability of bankable projects, but most also noted there are restrictions on their ability to support early stage project development. Some DFIs do have access to additional funding for project development to overcome these issues. For example:

- FMO has access to an early stage fund linked to the AFC, which is also able to support project development activities (as was the case for the Cenpower IPP, where AFC provided project developer support alongside InfraCo Africa).
- The IFC also has funds for early stage project development support for transformational projects and can provide support through the InfraVentures facility, although this does not seem to have any projects in Ghana.

However, these existing initiatives appear to be relatively small compared to the need for project development support in Ghana. Stakeholders suggested that these interventions do not have the budgets or expertise in-house to provide sufficient levels of support to the project development process.

Some stakeholders were of the view that DFIs have been quite passive in providing support for project development activities. Instead they have waited for international developers to bring a bankable, well-structured project to them. The tendency of the DFIs to work together in clubs reflect this approach, and there are also attempts by some DFIs to work with major companies from their country of origin (e.g. OPIC working with GE).

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<sup>54</sup> Expanded PPI database.

<sup>55</sup> Expanded PPI database.

### **3.3.2. Infrastructure funds**

Infrastructure funds are currently not active players in the Ghanaian market, though there are some exceptions, including the African Infrastructure Investment Managers (AIIM) a joint venture between the Macquarie Group and Old Mutual Investment Group (Pty) Ltd, which is based in South Africa but with a regional office in Lagos. AIIM is active in the Cenpower and Asutuare projects.

The Pan African Infrastructure Development Fund is also involved, through project developer Aldwych, which was participated in the Tema Osonor project and is currently part of the team developing the Amandi power project.

The main problem that funds such as AIIM face is accessing a bankable pipeline of projects. There aren't many developers in the market who can take projects to close, and as a result AIIM has in some instances had to take on the role of developing the project.

Other private equity firms engaged in the Ghanaian market, such as Ghana Capital Partners, have also become involved in project development. Often they will become involved where the project developers are tried and tested, and where they already have a good relationship with them.

### **3.3.3. Banks in Ghana**

The project finance market is not well developed in Ghana, though international banks are more active, in particular South African banks such as RMB and Standard Bank. These banks are more likely to syndicate amongst themselves than to reach out to a wider group of stakeholders. More detail on the workings of the banks in Ghana is given in section 5.1 below.

### **3.3.4. Project developers**

Due to the early stage of development of the PID projects and the number of unsolicited projects undertaken in Ghana, private developers have played a key role in the market to date. The number of local developers in Ghana seems to be fairly small, though their role in projects such as Cenpower has been significant. One consultee suggested that local developers have not required significant technical skills but rather good political connections, though it was reported to us that this is changing with strong technical and financial skills becoming more important.

It appears from the consultations held that some of the DFIs consulted prefer working with international developers, rather than local ones, as the local developers lack the track-record of bringing projects to financial close. They are looking for proven and high-quality developers, with good capitalisation and access to funds, to bring them projects.

Stakeholders reported that in the energy sector, developers are coming to Ghana from the US, China and the Middle East with from companies such as GE, Aldwych, Jacobsen Elektro, eleQtra, InfraCo Africa, Endeavor, Amandi and Shenzen Energy.<sup>56</sup> The Energy Commission has provided more than 30 licenses to develop IPPs, and it is unclear how many of these will in fact materialise. This reflects larger problems, such as the lack of a clear approach to unsolicited projects.

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<sup>56</sup> From IJ Global Ghana country pipeline.

### 3.3.5. Institutional investors

The main institutional investor involved in infrastructure projects is the Social Security and National Insurance Trust (SSNIT). SSNIT is a government agency responsible for the administration of the Basic National Social Security Pension Scheme.<sup>57</sup> SSNIT's total asset value was around US\$2bn in 2008, although the depreciation of the Cedi means that the current value is likely to be lower.

When providing debt finance SSNIT requires a minimum return of 200 basis points above the risk-free rate, while equity investments require returns of around 20 – 25%, depending on the nature of the asset.

In 2012 the SSNIT incorporated an investment company (CENIT Investment Limited) to undertake investment in an IPP located in Tema (formerly Tema Osonor). The capacity of the plant is currently being expanded. CENIT loans were provided by SSNIT at rates equivalent to 2-year government bonds + 500 basis points with a ten year tenure, with a debt/equity ratio of 82/18. SSNIT is currently 100% owner of the SPV, CENIT Investment Limited, which owns the project development, owner and operator company CENIT Energy.

The Trust also holds an interest in the South Africa based Pan-African Infrastructure Development Fund (PAIDF), whose main activity is providing private equity to project developers and sponsors such as Aldwych, which is owned by PAIDF.

One stakeholder suggested there is a large opportunity for SSNIT in the Ghanaian infrastructure market, though to date their involvement is at a relatively early stage.

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<sup>57</sup> C. A. Mbeng Mezui and B. Hundal, African Development Bank Group with NEPAD Regional Integration and Trade Department (2013), *Structured? Finance: conditions for Infrastructure Project Bonds in African Markets* pp.143-149

## **4. BARRIERS TO INVESTABILITY / BANKABILITY**

Discussions held with stakeholders suggest that the lack of supply of bankable projects is the main constraint to the increased provision of private finance to infrastructure projects. According to the findings this reflects failures in the enabling and regulatory environment. Indeed one consultee described the environment in Ghana as ‘disabling’ rather than ‘enabling’. Another suggested that Ghana was one of the region’s most difficult country environments to work in on infrastructure projects; Nigeria by comparison was much easier. These comments give some indication of how challenging it is to develop a PPP in Ghana.

From the review undertaken, there are seven key barriers to bankability in Ghana, many of which are closely interlinked. These are discussed in turn below.

### **4.1. Low levels of government capacity for PPPs**

The PPP capacity within the government, both within the PID and within other government departments and line ministries is limited, and this restricts the ability to progress the pipeline of deals.

Consultees emphasised that while the PID has worked hard to develop a pipeline, the team is small, doesn’t have full time staff, and has relatively restricted powers and must undertake procedures during the project development stage that are complex and time consuming. The World Bank IDA credit to support the PPP programme has struggled to improve the performance of the PID, as it has failed to hire the necessary sector experts and the main resident advisor left and has not been replaced. The World Bank project is considered to be moderately satisfactory with regards to the overall implementation process; however, its progress towards the achievement of its objectives is rated moderately unsatisfactory.<sup>58</sup> PID has also benefitted from complementary long term support and capacity building from DFID, which is now under review.

However, the capacity in other government departments appears to be weaker. While technical assistance is being provided by the World Bank in the form of transaction advisors to ministries to support priority projects, it is not clear that this will overcome the broader capacity issues.

In addition, while it is generally agreed that VRA and the other state-owned enterprises have a high level of capacity and skill, some stakeholders observed that some market figures outside of these organisations are lobbying for very ambitious projects for the Ghanaian energy market (such as options from introducing nuclear power)<sup>59</sup> and this means that such longer-term, grand scale ambitious projects are discussed alongside more immediate IPP options.

### **4.2. Limited political support for PPPs**

The political economy context in Ghana is challenging and was highlighted as a key constraint to further PPP development.

Consultees raised a number of issues surrounding the impact of the political cycle on PPP development. Ministers are driven by the electoral cycle, wishing to develop projects that can be completed during their time in office. There are a lot of public commitments made in support of

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<sup>58</sup> World Bank, Projects & Operations (Accessed January 2015), *Ghana - PPP Project*.

<sup>59</sup> Voice of America (Dec 2014) *Ghana Prepares for Nuclear Energy Program*

private sector participation, and a perception amongst stakeholders that PPP is the preferred approach for developing key infrastructure such as airports and ports. However, in practice there is less acceptance that private sector should have a central role in the provision of infrastructure services as this would mean a loss of assets, control and patronage for government.

This remains a big barrier to further development of PPPs. As such, the political will to support projects or drive longer term policies is seen as weak. Stakeholders suggested that where there is government support for a project, this generally takes the form of ensuring licenses and planning permission are provided to the project, rather than providing any financial support.

As an election is planned for the end of December 2016, it is possible that the current framework for PPPs may change under a new government – an issue that is exacerbated by the adversarial two party presidential system. Stakeholders suggested that there is a lack of bipartisan support for the ownership/market structure for the energy, water and transport sectors, which makes the risks of reforms being reversed even more significant for potential market entrants.

The importance of the electoral cycle means in the run-up to the election there are likely to be very few policy initiatives, which can slow down progress. As part of this, stakeholders suggested that governments and ministries would rather make decisions accepted by a consensus of interested parties, rather than drive through measures that may make them unpopular at the next election.

There is no one key champion for PPPs in Ghana and the leadership on this issue is fragmented. In addition, the wide range of stakeholders (many of whom have vested interests and resistance to the PPP programme more generally) slows down project development, as do complex approval rules - for example, requiring parliamentary and cabinet approval for any PPP whose total project cost exceeds Cedi 50m). One stakeholder described the current approvals and implementation institutional arrangements for PPPs in Ghana as ‘totally dysfunctional’. While there is a National Infrastructure Commission responsible for the national plan, this body has limited capacity and independence to move the infrastructure agenda forward.

There is also considerable public distrust of PPP or divestment in Ghana, and a high dependency on the public sector. The participation of the private sector in the provision of infrastructure services does not have popular domestic support, which is partly a result of Ghana’s history as a socialist country. Partners such as USAID are working with the Ghanaians to increase understanding about the importance of a market driven economy and what benefits this could have for the country.

### **4.3. Reliance on unsolicited bids**

Due to the limited momentum behind the government PPP project pipeline, the majority of deals undertaken in recent years, and the majority of infrastructure PPP projects in the pipeline (as presented in Table 3.2) are unsolicited projects.

While organisations such as PPIAF have sought to develop thinking on how best to manage unsolicited proposals,<sup>60</sup> there is currently no clear effective strategy for how to do so in Ghana. The government has not subjected the unsolicited proposals to “efficiency” scrutiny or benchmarking, which stakeholders have noted has deterred participation of credible international investors. All the deals to

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<sup>60</sup> For example: PPIAF (August 2014), *Unsolicited Proposals – An Exception to Public Initiation of Infrastructure PPPs: An Analysis of Global Trends and Lessons Learned*.

date have been sole sourced, meaning they are likely to be more expensive than if they were bid out through competitively bid, public tender processes. This makes the provision of services more costly to the government and the taxpayer. One stakeholder estimated that for a developer, an unsolicited proposal could have an IRR of 24%, while the IRR for a tendered proposal could be half that.

The government also does not have a clear policy on which unsolicited proposals should be advanced or how they should be taken forward. There are some PID rules on this matter, which according to some stakeholders had helped to reduce the number of unsolicited proposals. However, other stakeholders noted that the government often supports lots of different projects and looks for a winner to emerge – for example, in the solar energy space 29 projects were allowed to be developed before the recent cap was introduced. In addition, a lack of a clear approach to unsolicited projects has delayed the development of the Accra-Kumasi Highway for nearly ten years. More detail on this is provided in Annex A.

Furthermore, consultees noted that government support to IPPs has not been standard but negotiable, as in two comparable unsolicited projects (TICO II and Cenpower) the structure of the power offtake deals developed has been different. For the TICO II project, the PPA was between the project developer and VRA; however for Cenpower the PPA was with ECG. This makes IPP projects that have been implemented successfully difficult to replicate.

Not having a clear system for dealing with unsolicited proposals creates uncertainty and deters developers from carrying out the high risk (and cost), early stage project development activities, which restricts the pipeline of bankable projects. There is also a risk that the current method is likely to encourage more project developers with speculative projects, or who are politically connected.

#### **4.4. Finances and governance of utilities and state-owned enterprises**

In the energy sector, while state-owned enterprises have much more experience of working with the private sector than the ministries discussed above, their ability to support more projects is constrained by financial and governance issues. From the discussions held, this can partly be attributed to tariffs that do not recover full costs, major inefficiency and distribution losses plus non-payment by some large, government-owned organisations or politically influential industries. Despite these utilities being owned by the state, to date there has been an overall acceptance of poor operating efficiency and weak corporate governance of the utilities.<sup>61</sup>

Stakeholders noted that tariffs in the electricity sector are around 80% of costs, though this has increased from 60% over the last year. A proposal for the automatic adjustments of tariffs was proposed by the PURC, but this was put on hold for political reasons, which one stakeholder emphasised as a lost opportunity for the market. Quarterly determination of electricity tariffs is being undertaken by PURC; however, it appears from discussions that the adjustments are not being passed on to customers by the Government of Ghana for political reasons. In addition, with load shedding ongoing in 2015,<sup>62</sup> increasing tariffs further would be challenging and PURC has avoided taking such steps in the past.<sup>63</sup> Consultees commented that outside the urban water sector, the main opposition

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<sup>61</sup> Amoako-Tuffour and Asamoah (February 2015) *“Thinking Big” and Reforming Ghana’s Energy Sector*.

<sup>62</sup> Myjoyonline.com (28 January 2015), *Expect load shedding to continue for the next two months - GRIDCO*

<sup>63</sup> AllAfrica, Stephen Odoi-Larbi (26 June 2014), *Ghana: Electricity, Water Tariffs Go Up*.

for tariff increases in power or road tolls or other user fees was from political or industry groups not households.

One source suggested that ECG is currently only paying 40% of its invoices, and has a huge backlog of payments. This was attributed to some government entities and industrial users not paying their tariffs – in summer 2013 local news sources reported that the government owed ECG close to US\$500m.<sup>64</sup> The government is also in the process of structuring the implementation of 1000MW of emergency power and the payment structure for this is likely to further weaken ECG and the public finances overall. The reforms to be undertaken through the MCC compact have been welcomed by stakeholders, and hopefully should overcome a number of these issues.

VRA was seen by the stakeholders interviewed as the best state-owned enterprise in Ghana: and has involvement in IPPs that are current (such as TICO II) and some that are in the pipeline. However, the organisation is financially weak, due to low tariffs and late payment by large clients. These include ECG itself (approximately US\$78m), Volta Aluminium Company (approximately US\$22m) and government departments (roughly US\$146m).<sup>65</sup>

The constraints facing GridCo are less well documented, though one consultee suggested that GridCo's problems are serious and it may default.

This can have a significant impact on private investment in the industry. Interviews suggested that industry returns for IPPs are around 18-23%, but if there is a build-up in arrears in payment from the offtaker, this reduces very quickly. The current situation is likely to deter investors and make projects less bankable.

In the case of renewables, the Ministry of Power has recently commented that it does not want to be involved with guarantees, rather use should be made of the MIGA/partial risk instruments; this policy may be extended to the thermal sector, which would seriously restrict the number of possible IPPs, as few investors would be willing to take on the payment risk of the offtakers. However, it appears that even with this restriction, the Government continues to provide Government Consent and Support Agreements duly approved by the Parliament, which equate to quasi-guarantee, which may help to negate the impact of this issue.

#### **4.5. Macroeconomic environment**

The ability of government to overcome the challenges detailed above is limited by the weak macroeconomic environment in Ghana. This highly constrains the fiscal space for financing public infrastructure, and further fiscal consolidation is likely. Government expenditure – in particular on public salary wage costs – had been growing rapidly up to the current crisis. The IMF warned Ghana on the public sector salary expenditure in 2013, following the wage bill for civil servants almost tripling to Cedis 8.54bn (US\$2.4bn at current exchange rates) between 2009 and 2012.<sup>66</sup>

There is a widespread view amongst the stakeholders met with that the US\$750m Eurobond issue in September 2014 was spent on funding current expenditures rather than undertaking capital

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<sup>64</sup> isodec.org.ph (11 March 2013), *Ghana is in crisis – government must sit up*.

<sup>65</sup> isodec.org.ph (11 March 2013), *Ghana is in crisis – government must sit up*.

<sup>66</sup> FT.com, Irene Mango (25 May 2013), *Ghana eyes \$1bn Eurobond*.

investment. A key element of the new IMF programme is reform of the government payroll.<sup>67</sup> One stakeholder suggested that the government was unwilling for a long period to make the difficult decisions required by the IMF because they expect it to impact on their position in the polls in the December 2016 election.

In addition, while graduation to lower middle income country will not immediately impact on the availability of IDA or African Development Fund concessional funding (due to the three year transition between groups) the change will in the long run restrict Ghana's access to concessional finance.

Ghana's debt limits have been reached which limits the scope to make future bond issues. Furthermore, S&P downgraded Ghana in Q3 2014 to B minus, making it six grades below investment grade. The outlook is seen by ratings agencies as either being stable or negative.

Also the commodity price collapse plus fiscal imbalance led to loss of over one third of Cedi / dollar value in 2014, there has since been a slight stabilisation but the currency still vulnerable and there are limited reserves Major underemployment and informal employment issues, as well as cost of living concerns, are strong influencers in the run up to the next election.

All these issues restrict the government's ability to act as a source of finance for projects and increases the importance of improving the environment for private finance. The weak macroeconomic environment also has the effect of crowding out local investors from investing in the local infrastructure markets as they can achieve returns around 27% from 91-day treasury bills. This means that there is a significant opportunity cost involved with any infrastructure related investment – investors have the option of achieving a high-return on a relatively risk-free asset or investing in high-risk infrastructure projects.

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<sup>67</sup> IMF (11 December 2014), *Transcript of a Press Briefing by William Murray, Deputy Spokesman, Communications Department, International Monetary Fund.*



## **5. AVAILABILITY OF FINANCE**

Overall, the availability of finance is not seen as a major constraint in the Ghanaian market: the constraints to bankability detailed above are more biting. Nonetheless, some of the constraints that face different sources of financing in the market are summarised.

### **5.1. Banking sector**

Interviewees suggested that the total market capitalisation of the banking sector in Ghana is less than US\$3bn, which restricts its ability to finance infrastructure projects in any real way – the market does not have sufficient capital. To borrow from banks like Barclays in Ghana, interest rates are high (in the region of 25% on a Cedi loan) and the borrower must already have large accounts.

One consultee noted that these banks focus mostly on making at the most five to six year loans to big corporates that have a good track record with them and large deposits. Overall, they are unfamiliar with infrastructure projects and with the concept of project finance – especially when projects are reliant on state owned enterprises that have a history of cash flow problems. Many local investors lack the appropriate knowledge required to undertake infrastructure investments and require a trusted third party to get involved – in the past, VRA would have been the preferred choice.

In addition, interest rates in Ghana are high and are unlikely to fall, with short tenors on government lending. This ‘crowds out’ infrastructure investments, which have a lower return over a longer period of time. It appears unlikely this source of finance will increase significantly in the medium term, and commercial lending in Ghana may be more suited to financing infrastructure once they are operational – i.e. taking brownfield risk.

However, EIB and other DFIs have shown interest in providing credit lines to local banks, who would on-lend to support infrastructure projects. One stakeholder suggested that this would provide more flexible loans at lower interest rates than are currently available in the commercial bank market in Ghana. It appears that no such deals have been undertaken to date, it has been suggested this could in the future be very beneficial to infrastructure projects.

### **5.2. Institutional investors**

The involvement of SSNIT in the Ghanaian infrastructure sector shows a larger local institutional investor appetite in infrastructure than is seen in comparable markets such as Kenya. SSNIT is constrained in what type of projects that it can invest in as its risk tolerance is low yet they are still seeking a return 200bps above the risk free rate.

The private pension market in Ghana is very small. There is no evidence to suggest that they are currently engaged in the infrastructure sector.

While the GIFF was recently set up and has strong government support, this is not being financed at the moment, and all fiscal sources are under pressure due to the government’s deficit and the IMF programme. The expectations of this fund being able to act as envisaged were generally limited amongst the stakeholders met with and Phase 2 of PPP IDA credit has been cancelled.

### **5.3. DFIs**

While DFIs have been a key financier for the projects undertaken to date, some consultees suggested that they remain relatively risk averse in the Ghanaian market.

Interviews showed that DFIs are for the most part restricted to hard currency financing, and are looking for projects that have foreign exchange cash flows. This further restricts the pool of projects they can support. Some of the smaller DFIs have conservative mandates that prevent them from undertaking more catalytic projects, with more risk but potentially larger development impact.

## **6. OVERALL CONCLUSIONS ON KEY CONSTRAINTS TO PRIVATE FINANCING OF INFRASTRUCTURE**

Overall, the bankability of projects is the main constraint across the three sectors studied. The limited momentum behind the PPP programme in Ghana, in part due to a lack of strong leadership and no clear programmatic approach, has prevented a real pipeline from being developed, and the complex and slow moving framework for IPPs and other unsolicited projects has hindered the development of bankable projects by the private sector. Weak macroeconomic fundamentals and limited capacity or funding for project development has further constrained the pipeline of deals. The financial and governance weaknesses of the state-owned enterprises studied also reduces private sector confidence in the financial viability of these projects and increases their risk.

While in recent months there have been some significant steps taken to address these issues – including the IMF deal and agreement of the MCC compact – it is clear that Ghana is behind Kenya and Nigeria in terms of the development of its PPP programme and commitment to private sector engagement in the infrastructure sector. Based on the comments stakeholders made regarding the current levels of political will to undertake reforms and drive change in the infrastructure sector, this seems unlikely to change in the near future, especially as the general election gets closer and policy initiatives are less likely to be taken forward. However, change is urgently needed, as recent protests to the three-year on-going energy crisis show.<sup>68</sup>

While a number of investors in the market would face barriers to investing further in the Ghanaian infrastructure sector, these are unlikely to pose serious problems to the market until the broader bankability issues are resolved.

Some options for overcoming these constraints were identified during the discussions held. These are summarised below.

### **6.1. Priorities and options for action**

#### **Enabling environment solutions:**

- Steps must be taken to improve the finances of VRA, ECG and GridCo in the energy sector, and the Road Fund and the Ghana Highways Authority in the roads sector. In particular, progression on the MCC compact is key to ensuring ECG is credible as an offtaker.
- A medium to long strategic term plan needs to be put in place with specific targets for PPP development. To ensure political commitment, it would be required to set out in the constitution that the government in power continues to support projects that have been taken to a particular level of development. A focus on the longer term would be important, to ensure politicians did not only target successes that can be achieved during their time in office.
- A clear, well specified PPP Law must be passed by parliament, including the necessary supplementary information, and a clear view on how this law may be implemented. Stakeholders used the Renewable Energy Act as an cautionary example – while this was clearly

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<sup>68</sup> The Guardian (May 2015) *Ghana's celebrities lead protest marches against ongoing energy crisis.*

set out, the market cap recently imposed on solar power significantly reduces the value and meaning of this Law.

- The approval and implementation process for PPPs could be reformed, to make it more streamlined, efficient, and easy to understand for new market entrants. Increasing the ceiling for parliamentary approval for PPP projects would be a simple example of this.
- The government also needs to focus on becoming more systematic in its development of a PPP programme and less reliant on unsolicited bids. Both PID projects and IPPs should be prioritised based on a mix of criteria, set programme and implementation requirements. A clearer, more consistent approach to dealing with unsolicited bids is also required.
- A national champion of private participation would help set a lead for the government and could be a non-partisan example which others could follow.
- A competitive, bid-out programme such as the Renewable Energy Independent Power Producer Procurement Programme (REIPP) in South Africa would help bring in power at the lowest cost and create a pipeline of projects that would give the private sector and government confidence to invest in the required technical and financial skills.

#### **Project development solutions:**

- DFIs need to take a larger role in project development than they currently do. While this is risky, a large and well diversified portfolio would help overcome this. Business plan competitions would also be an alternative way to provide project development support to the most promising projects.
- The government should focus on developing a clear internal policy to infrastructure development, setting up the necessary legal and regulatory frameworks, structure the project pipeline to give developers more predictability, and let the private sector focus on project development in the short term, while building up a public sector advisory team with more commercial experience.
- Alternatives would be to set up a government project development facility or provide broader longer term funding to develop plans and hire transaction advisers. A viability gap fund could also be set up alongside, which would help overcome issues of projects not being commercially viable and facing funding gaps.

One potential source of funding for green energy project development that was suggested was the Renewable Energy Fund, which will be established based on a levy on petrol.<sup>69</sup>

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<sup>69</sup> Clean Technica (Mar 2015) *Ghana Increases Levy On Petroleum Products To Fund Solar Power Projects*.

## ANNEX A LIST OF CONSULTEES

Organisation	Name
PID	Ekow Coleman and Magdalene Apenteng
InfraCo Africa - London	Ebbe Hamilton
PWC	Vish Ashiagbor
DFID	Dave Beer and Andrew Keith
USAID	S. Waqar Haider
Cenpower	Sam Brew Butler
Ministry of Energy	Steve Doku
InfraCo Africa - Accra	Elizabeth Amissah
SSNIT - CENIT Investment Limited	Albert Ayirebi-Acquah
WB PPP Project Task Officer	Aijaz Ahmad
Ghana Investment Promotion Centre	Kofi Antiri
AIIM	Olusola Lawson
Independent Expert	Mussa Dankwah
Independent	Chris Shugart
DEG	Martin Mainz
Ghana Capital Partners	Sidney Yankson
PPIAF	Satheesh Kumar Sundararajan
IFC - Accra	Richard Arkutu

## **ANNEX B PROJECT CASE STUDIES**

### **B.1. Closed projects**

#### **B.1.1. Electricity Generation: TICO II thermal power expansion**

TICO II<sup>70</sup> is an expansion project based at an existing power generation facility (TICO I) at Aboadze, a small town some 15 km north west of Takoradi in Western Ghana. It involves the 110 MW increase of the existing 220 MW simple cycle plant that has been operational since 2000. The project adds a steam turbine but uses waste heat recovery technology to produce steam and converts the full 330 MW to a combined cycle, so the extra power is generated with no significant increase in fuel or greenhouse gas emissions and also lowers the unit cost of production. The TICO II project is under construction and commissioning is expected in early 2015.

TICO II is at a site with pipeline, storage and transmission assets that also has another functioning power plant, the VRA wholly owned 330 MW combined cycle ("TAPCO"); both have been converted to dual fuel – light oil and natural gas – so that early use can be made of Ghana's offshore gas fields. TAPCO is 100% owned by VRA. TICO I is a joint venture with 90% owned by TAQA – a subsidiary of the Abu Dhabi National Energy Company – and 10% by VRA. Both plants sell power to the grid run by the ECG on 25 year power purchase agreements. The EPC is being undertaken by Mitsui Co and KEPCO E & C.

A third power plant with 132 MW combined cycle also shares the site; this \$245m investment has been delivered by the Canadian Commercial Corporation as contractor. Finance was provided by a loan from the Government of Canada and the Societe General of Canada. This project is currently shut down due to fuel issues. It is expected to start operation again after repairs and once natural gas becomes available.

### **Financial**

After a failed project financing process between 2005 to 2008 and following the sale of TICO from CMS to TAQA, in 2011, TICO sought to raise \$327m of financing over 15 years to fund the expansion on a limited recourse basis. Long term commercial financing of such projects is not available in Ghana and therefore TICO approached FMO and the IFC. FMO acted as mandated lead arranger to raise \$212.1m in debt financing.

Equity was based on a combination of the value of the existing asset plus internally generated cash from TICO; all the debt was from international DFIs. These were: AfDB \$22.2m; DEG \$24.9m; EAIF \$15m; FMO \$80m; ICF- DP \$30m and Proparco \$40m. In addition the IFC tranche lenders were: IFC \$80m; IFC on behalf of the Canadian Climate Change programme \$15m and Opec Fund for International Development \$22.5m. This adds in total to \$330m. The financial close was in mid-2012 and following Parliament and Cabinet approval, construction started later in the same year. TICO was the first IPP in Ghana and TICO II the first commercially financed project (though all the finance comes from DFIs, not private investors).

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<sup>70</sup> Also known as Takoradi II in some sources.

The two PIDG facilities combined to give \$45m; in the absence of other information, additionality would be proportional to value vis-a-vis the overall funding package.

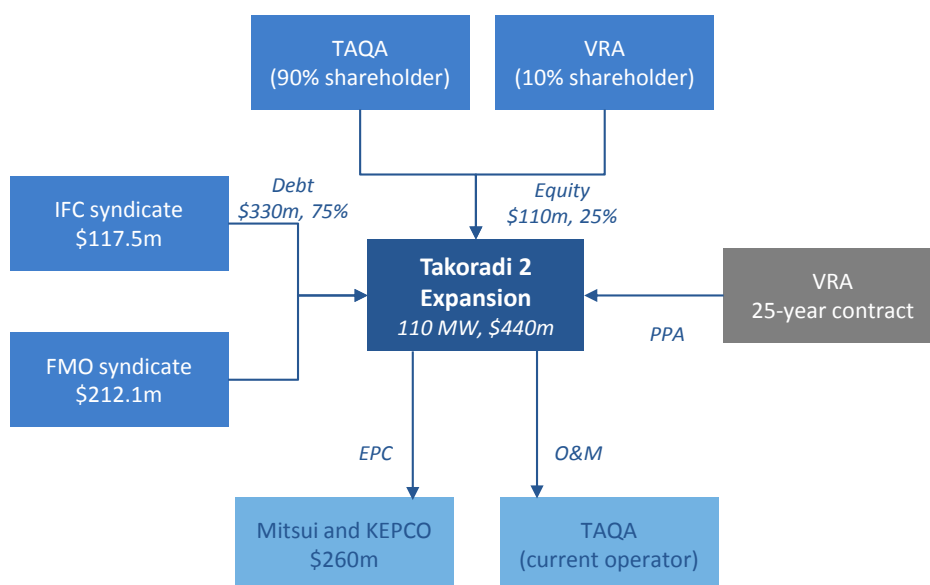
A breakdown of the financing is provided in Table 1.

Table 1: Finance breakdown for the Takoradi 2 Expansion

Finance type	Finance source
Debt \$330m, 75%	IFC tranche (\$117.5m): IFC \$80m, IFC on behalf of the CCCP: \$15m, OFID \$22.5m Consortium of DFIs led by FMO (\$212.1m): AfDB \$22.2m, DEG \$24.9m, EAIF \$15m, FMO \$80m, ICF-DP \$30m, Proparco \$40m
Equity \$110m, 25%	Calculated as 'a combination of the value of the existing asset and internally generated cash from TICO'. <sup>71</sup>

Source: PIDG Annual Report 2013, pp.92-93

Figure 1: Structure of financing of the Takoradi 2 Expansion



Sources: (1) PIDG Annual Report 2013 pp. 92-93; ConstructionWeekOnline.com, "TAQA agrees \$330m funding for Ghana Power Plant", 28/01/2013; (2) Government of Ghana (Ghana.gov.gh), "TAQA completes financing for Takoradi 2 Expansion", 28/01/2013; (3) PennEnergy.com, "TAQA breaks ground on gas-fired power plant expansion in Ghana", 11/04/2013.

The additional generation capacity will add reliability<sup>72</sup> to the grid – load shedding is very common – and allows increased access. It is estimated that some 8.9 million people will benefit from improved access and some one third of these will be women.<sup>73</sup>

VRA expanded its PPA to incorporate the TICO II expansion. VRA provide the fuel for this project, though one commentator told us that VRA's cashflow problems have meant in the past that the plant has been unable to run because the fuel has not been paid for. Since the construction of the expansion, the plant has also suffered problems, due to poor maintenance:<sup>74</sup> once the new cooling works were completed, the plant would not restart.

<sup>71</sup> PIDG Annual Report 2013, pp. 92-93

<sup>72</sup> This is important not only for less blackouts but also for the avoidance of using high cost, high polluting stand by capacity.

<sup>73</sup> PIDG Annual Report 2013

<sup>74</sup> myjoyonline.com (12 June 2014) UK experts' shoddy job costs Ghana 110 MW

## Conclusions on TICO II expansion

This project only received debt from international DFIs, and thus is a strong example of the second model of infrastructure financing, which is presented in the main report. While VRA has faced cash flow problems relating to fuel, its presence in the deal gave comfort to some of the investors, due to its good reputation. In addition, TICO was also considered to have a good reputation, but has had recent maintenance problems that kept the plant down for some time.<sup>75</sup> This appears to have been resolved.<sup>76</sup>

### B.1.2. Electricity Generation: Cenpower IPP

Cenpower is a 340MW gas-fired IPP plant near Tema. It was developed by a partnership between InfraCo Africa and local developers Cenpower and later the African Finance Corporation (AFC). The project began its development in 2003 and reached close in late 2014. This is an interesting project with a high level of African finance. The financing structures for the project are summarised below.

*Table 2: Finance breakdown for the Kpone IPP (Cenpower) project*

Finance type	Finance source
<b>Commercial debt</b> \$447m	Rand Merchant Bank was lead arranger, lenders include Nedbank and Standard Bank. Export Credit Insurance Corporation ECIC cover being arranged by Rand Merchant Bank.
<b>DFI debt</b> \$187m	DFIs : FMO (lead arranger) \$24m, unknown split of \$163m between the others DEG, OFID, IDC, EAIF, DBSA.
<b>DFI mezzanine</b> \$20m	FMO
<b>Total Equity</b> \$250m	AFC 31.85%, Sumitomo Corporation 28%, Cenpower Holdings 21%, Mercury Power 15%, FMO 4.15%.

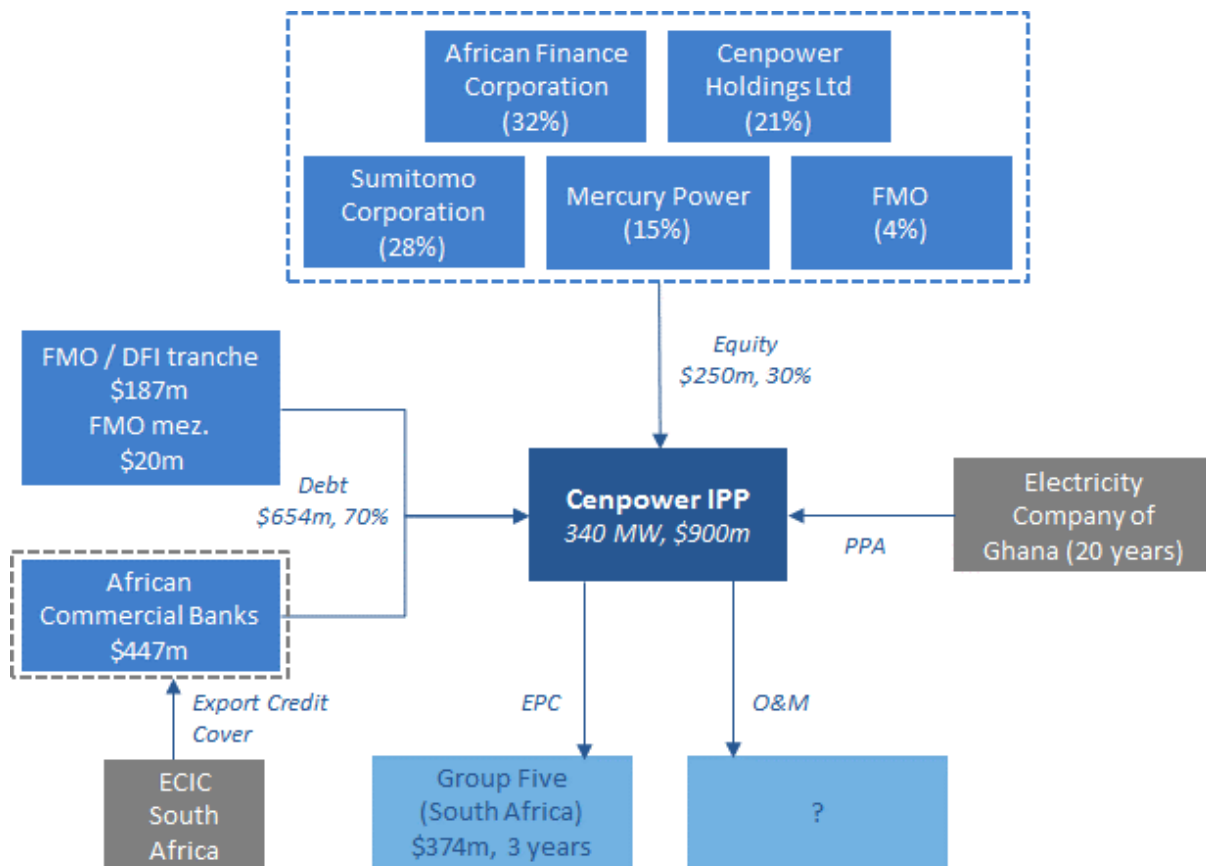
*Source: FMO, "Cenpower Generation Company Limited" (project/financing description).*

<sup>75</sup> The Chronicle (16 June 2014) *T2 Plant Shut Down*

<sup>76</sup> citifmonline.com (27 January 2014) *Load shedding to intensify; new time table out soon*



Figure 2: Structure of financing for the Kpone IPP (Cenpower)



Sources: African Finance Corporation, "AFC leads in financing of the landmark US\$900 million Kpone IPP", 02/10/2014; EleQtra, "Cenpower IPP, Ghana" <http://eleqtra.com/projects/cenpower-ipp/>; ESI-Africa.com, "Group Five scoops ZAR4bn IPP project in Ghana", 25/08/2014.

### Timeline of the project

Cenpower IPP was a private sector originated project. In 2003, local developers envisaged a project in the centre of Ghana (hence, Cenpower) that would generate 100MW to be sold to the mines. Cenpower were a small local outfit with limited capital but they had the local contacts.

InfraCo was contacted by Cenpower and got involved in 2005 (through an ad hoc meeting) when it was just setting up and was looking for projects. By this time the Government wanted the plant to be 300MW and change the location to Tema, with the 200MW balance being sold to ECG.

For about 18 months, the project development went steadily (see timeline). The challenge then was that the government would not provide any payment security beyond a letter of credit. There would not be a sovereign guarantee. At the time, the plan was to sell 40% to the mines at a higher price, and give the rest to ECG and work with the banks to make this viable, possibly without the guarantee.

The mining element however was complex, as the mines were concerned that VRA would not give them a connection – at the time, GridCo was still part of VRA – since the project would be competing with VRA.

Table 3: Project timeline

Date	Project component
2003	Project originated with Cenpower
Aug 2005	MoU signed
Mar 2006	JDA signed and site secured, with a lease from the Tema Development Association
Dec 2006	Environment permit
May 2007	Generation licence
Apr 2007	MoU for 200MW for ECG (still expecting 100MW to go to mining)
Aug 2009	PPA signed – but no payment security included
Mar 2010	AFC signed (after their board initially rejected in Feb 2009), closed Apr 2010
2010	Mining component of the project dropped
2012	Government agrees to guarantee
Sep 2014	InfraCo exit and financial close reached

### The roles of AFC and InfraCo Africa

By 2009 the project needed new long term investors, and AFC was interested. The project was taken to the AFC Board in Spring 2009, but was rejected by the organisation. After the development of a strategic plan, the project was passed by the Board in Spring 2010.

- AFC bought 46% in 2010, InfraCo kept 24% and Cenpower kept 30%.<sup>77</sup> AFC had the required risk willingness and sufficient capital, together with InfraCo, to persist with the project. AFC worked with InfraCo to get the PPA bankable. AFC worked with ECG to increase its offtake to 325 MW, thus allowing the mining component to be dropped. AFC brought a local presence with Ghanaians on their team, which gave the consortium a stronger voice. AFC were crucial for the project getting its second wind.
- From 2007-2012 was a very slow period for the project, with 2005-2007 moving swiftly, and with steady progress from 2012 to date.

InfraCo were key in getting the project off the ground, making it look viable and properly structured, and keeping it going through the slow three years 2007-09. The team remained committed to the project, where some groups may have given up. In the two years after the PPA was signed and AFC entered the deal (in 2010), AFC played a key role in working with the government and ECG to get the payment security package approved.

In the last two years both InfraCo and AFC were essential in getting the project to financial close, though in complementary ways: InfraCo managed the aspects related to the EPC, construction, O&M, the long-term service agreement, fuel supply, the environmental and social impact assessment and insurance. AFC meanwhile managed the PPA, the Government Support and Consent Agreement, and other local issues. Both parties jointly supported the debt raising process.

<sup>77</sup> IJ Global (13 October 2014) *Cenpower signs on Ghana's first project finance IPP*.

## Financing of the project

The EPC drove the financing structure for Cenpower IPP. The EPC had been bid out when the project got its first PPA. However, with the change in the technical requirements of the project after choosing to introduce crude oil, a new procurement process was undertaken: of the seven bids received two were 'pre-qualified' (both had also bid on the previous procurement): Group Five (a South African construction company); and China Machinery Engineering Corporation (CMEC).

The bidders were requested to propose financing, which was included in their bids. Group 5 brought in South African Export Credit and finance from Rand Merchant Bank. CMEC had Chinese finance. Following meetings with both bidders, Group 5 were selected.

Given the South African involvement, the developers were also able to bring in the South African Industrial Development Corporation and DBSA. This helped replace the IFC allocated debt.

African Infrastructure Investment Managers (AIIM) invested in Cenpower Holdings through their AIIF2 fund. Cenpower Holdings is ploughing its fees from the project into its equity and the rest of their 21% equity stake is backed by AIIF.

The project reached close in December 2014, and won "Deal of the Year" by Thomson Reuters' Project Finance International magazine for 2014.<sup>78</sup> It is expected to be constructed in 32 months, and is expecting to receive its first shipment of gas in 2018-20, therefore it is expecting to run on crude oil for two years.

## Conclusions on Cenpower

This project is an innovative example of an IPP in Ghana, drawing on African commercial finance with limited DFI support. When drawing lessons from the project, some key elements to note are:

- Both InfraCo and later AFC were willing to risk development capital in a patient way. This took both determination to stick with the project despite delays and challenges, combined with access to the required capital.
- The project was well developed and no 'shortcuts' were taken. While it took time to agree the guarantee, once this was agreed the projects was in a strong position. One of the challenges facing the Tema Osonor plant before it was taken over by SSNIT was that the developers had hoped to structure the project in such a way that it would not require a guarantee. However, this was not successful.
- In the last two years of the project's development, the Ghanaian government and ECG were focused on getting Cenpower to close, and Cenpower were far ahead of other potential IPPs in terms of its development. A particular example of this is that all the parties were strongly focused at the end on agreeing the guarantee.
- While Cenpower taking the supply risk on fuel made the project more complex and could have added up to a year onto the project development, without this the deal may not have happened. ECG had no track record of buying fuel and did not wish to take the risk. This was a key element in the risk allocation between the parties.

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<sup>78</sup> Trinity LLP (5 January 2015) *Trinity advises on two award-winning transactions*

InfraCo and AFC worked well as a team, drawing on both groups' skills. InfraCo played a key role in attracting and working with high quality international partners, such as Sumitomo, and this helped build a very credible team, including attracting investors such as Rand Merchant Bank. AFC meanwhile were able to work well with the government and accelerate the progress of the deal.

## **B.2. Pipeline projects**

### **B.2.1. Accra-Kumasi Highway<sup>79</sup>**

The Accra-Kumasi Road would link the two major commercial centres of Ghana – Accra and Kumasi, and would also provide primary access to the northern parts of the country as well as an international transit route for Ghana's landlocked neighbours such as Burkina Faso and Niger.<sup>80</sup> The project was originally one of the projects assessed by PPIAF for possible PPP procurement in the early 2000s, and in 2004, the Ministry of Roads and Highways issued an RFP. However, it is understood that the preferred bidder was rejected after the WB's due diligence.<sup>81</sup>

An unsolicited proposal was then submitted by Arterial Toll Roads Company Limited (ATRCL) for the dualisation (two lanes each direction) of the highway. ATRCL is a joint venture between US, Canadian and Egyptian companies.<sup>82</sup> ATRCL was awarded the concession by the Government of Ghana in November 2005, its first PPP highway project. This included the construction of 141 km of dual carriageway with, rest areas, toll plazas and intercity bus integration. This intends to reduce travel times from 5½ to 2½ hours. The estimated construction cost in 2011 was \$400m, to be undertaken over four years, and the concession was for 30 years. Tolls would be charged at 1 Cedi for 20 km, which is the same rate as on the existing Accra-Tema toll road.

The finalization of the concession was delayed by political processes and concerns, lack of institutional and legislative frameworks, and the public sector skill and capacity shortages. The project did not reach financial close before the 2008 elections. Negotiations continued with the new administration, and Cabinet approval was obtained in 2010, but parliament raised concerns and further negotiation was required.<sup>83</sup>

## **Conclusions on the project**

While the Accra-Kumasi highway would improve transport times between the two key commercial centres of Ghana, the government has been unable to date to develop a PPP for this project, either through public tendering or through the unsolicited bid submitted in 2005.

In his recent review of road concessions in Africa, Peter Brocklebank highlighted a number of key reasons for why the project was delayed. These include:

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<sup>79</sup> Initially the Accra-Takoradi project was proposed for review for this country study, as this is one of the PID pipeline projects. However, the information available on this was fairly limited, and instead a study on the Accra-Kumasi Highway was developed as more information is available. This is summarised below.

<sup>80</sup> Arterial Toll Roads Company 'The Road to Ghana: a toll road infrastructure PPP case study'

<sup>81</sup> Brocklebank, P (2014) Private Sector Involvement in Road Financing.

<sup>82</sup> Brocklebank, P (2014) Private Sector Involvement in Road Financing.

<sup>83</sup> Brocklebank, P (2014) Private Sector Involvement in Road Financing.

- **Political changes:** ATRCL had to negotiate with three different administrations, and for each had to remake the case for the project and re-negotiate concession terms.
- **Lack of an institutional framework:** The PPP procurement of the Accra-Kumasi highway was initially undertaken in the absence of a PPP policy or guidelines.
- **Lack of capacity:** ATRCL proposal was the first PPP highway procurement, and the Ministry of Roads and Highways were unfamiliar with the processes, causing delays in the decision-making process. This was exacerbated by the proposal being unsolicited and the government having no clear approach to handling this.
- **Political issues:** There are concerns about the affordability of tolls and their political popularity, in particular as there is no untolled alternative.<sup>84</sup>

How these lessons will be learned for the Accra-Tema and other road projects in development is not known.

### **B.2.2. Asutsuare Water treatment plant**

This is a project to implement a water treatment plant at Asutsuare which will take water from the Volta River, supported by two transmission pipelines (72km each) to Accra and Tema.<sup>85</sup> The project is estimated to cost \$656.49m. The IFC is the lead arranger for the project and will provide a senior and subordinated loan of up to \$164.12m. Debt of \$361.07m will be mobilized from other institutions.<sup>86</sup> The AIIM fund will likely enter as equity partners with Denys, the project developer. Macquarie Capital is advising Denys, which brings some big regional players into the market. This project is at the negotiation stage, with discussions ongoing on the concession agreement. It is hoped that the project will reach financial close within the next year.

The project suffered some delays, when the new Board of Directors of the GWCL conducted a review into the project and how its prices and outputs will interact with the other PPPs. The Board is also looking at issues and financial constraints within Ghana in the wake of the current crisis.

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<sup>84</sup> This section draws on Brocklebank, P (2014) Private Sector Involvement in Road Financing.

<sup>85</sup> Ghana Ministry of Finance, "Pipeline projects: Ghana PPP Programme" (Accessed November 2014).

<sup>86</sup> IJ Global (21 November 2014) *Asutsuare Water Treatment Plant PPP*

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