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CASE STUDY ON SUPPORT FOR PRIVATE INVESTMENT IN INFRASTRUCTURE

Gigawatt Solar Plant in Rwanda

Advisory Group on Investment and Development (AGID)
19 March 2015

This document is tabled for COMMENT under Item 5 of the draft Annotated Agenda [COM/DAF/INV/DCD/DAC/A(2015)1].

The paper incorporates comments to the earlier version [DCD/WKP(2014)3] which was issued on 19 December 2014.

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ABBREVIATIONS

ADA	Austrian Development Agency
AGID	Advisory Group on Investment and Development
BADEA	Arab Bank for Economic Development in Africa
DAC	Development Assistance Committee
DFI	Development Finance Institution
DFID	Department for International Development
EAIF	Emerging Africa Infrastructure Fund
EARP	Electricity Access Rollout Programme
EDPRS	Economic Development and Poverty Reduction Strategy
EEP	Energy and Environment Partnership
EWSA	Rwanda Energy Water and Sanitation Authority
FMO	Dutch Development Bank
GoR	Government of Rwanda
IDA	International Development Association
IFC	International Finance Corporation
IPP	Independent Power Producers
LDC	Least Developed Country
MDB	Multilateral Development Bank
MoU	Memorandum of Understanding
Norfund	Norwegian Investment Fund for Developing Countries
OPIC	Overseas Private Investment Corporation
PIDG	Private Infrastructure Development Group
PPA	Power Purchase Agreement
PPP	Public-Private Partnership
RDB	Rwanda Development Board
SOE	State-Owned Enterprise
SPV	Special Purpose Vehicle
SWAp	Sector Wide Approach
USAID	United States Agency for International Development

SUPPORT FOR PRIVATE INVESTMENT IN INFRASTRUCTURE: CASE STUDY OF THE GIGAWATT SOLAR PLANT IN RWANDA

I. Background and Introduction

1. The Development Assistance Committee (DAC) has been exploring how development partners could better mobilise the private sector to contribute to development. In this context, the Advisory Group on Investment and Development (AGID) has been discussing donor policies and financing in the area of infrastructure as one of the deliverables for the Aid for Investment work stream[1]. The focus on infrastructure is based on its vital role in economic growth and human development. At the same time, financing infrastructure is challenging due to insufficient government and donor budgets; therefore, mobilisation of private resources is being pursued as a viable avenue to fill the funding gap.

2. A stocktaking exercise on the policies, activities, and financing of development partners in mobilising private investment for infrastructure was carried out[2]. In order to complement the picture, a case study on a Public-Private Partnership (PPP) toll highway project in Senegal[3] was also discussed by AGID. For the second study, an energy project co-financed by private investors and development partners in Rwanda is hereby presented. AGID members are requested to forward initial comments on this paper to the Secretariat. The document will then be revised to be tabled for an AGID discussion on 19 March 2014.

3. The objective of the case studies is to identify the factors and roles of development partners that contributed to private sector participation in infrastructure. Therefore, other aspects such as a detailed analysis of financial returns of the project or its development impact are not covered. The findings of multiple case studies will be consolidated into more general lessons on the development partners' role in mobilising the private sector for infrastructure, which will then be tabled for discussion at a future AGID meeting.

4. The methodology of this case study involved a desk review of project reports and other sources as well as consultations with several development finance institutions (DFIs), such as the Dutch FMO, Norwegian Investment Fund for Developing Countries (Norfund), Private Infrastructure Development Group (PIDG) [4]—a multi-donor trust fund that invests in infrastructure in developing countries—and Gigawatt Global, a Dutch renewable energy company specialising in the development and management of solar fields in developing countries. Based on the findings, a chronology of the project was put together, along with the financial instruments used at each stage.

II. Context and Project Description

Political, Social and Economic Context

5. The Republic of Rwanda, a landlocked country in Central Africa, became independent from Belgium in 1962. It is known for the 1994 civil war and genocide of an estimated one million people and two million displaced people. After the end of the conflict, a multiparty government was set up immediately, followed by the establishment of a new constitution in 2003. President Paul Kagame has been in power since April 2000[5].

6. Rwanda is one of the smallest but most densely populated countries in the continent with a total population of about 12 million[6]. The country is classified as a Least Developed Country (LDC) which remains dependent on development aid—in the 2000s, budget support accounted for more than half of Government of Rwanda (GoR)'s annual budget. More recently in 2013-2014, grants still represent about 30% of the budget[7]. On the other hand, real GDP growth averaged about 8% between 2001 and 2013, with

the poverty rate falling from 59% in 2001 to 45% in 2011[8]. This is in part due to the GoR's efforts to implement the long-term development goals adopted in 2000 under the Vision 2020 strategy whose main objective is to transform the country into a middle-income country by 2020[9].

7. The Vision 2020 was implemented through successive medium-term plans, including the Economic Development and Poverty Reduction Strategy (EDPRS) since 2013. The current strategy strongly emphasises the role of the private sector in enhancing economic growth and poverty reduction by "increasing investment in priority sectors and attracting large firms with backward linkages"[10]. In this respect, the country implemented several reforms, including the creation of the Rwanda Development Board (RDB) in 2008, which is an independent agency composed of the Rwanda Investment Promotion Agency and seven other agencies related to the promotion of business and private investment in the country[11]. These reforms to improve the business and investment climates received significant support by development partners (See Box 1 and Figure 1).

Box 1. Support to policy reforms in business and investment

Rwanda has a distinguished record of carrying out significant reforms in the 2000s that led to substantial improvements in its business environment which was essential in leveraging private investment. Here, development partners played a key role in supporting these reforms. The World Bank started several programmes, co-financed by Germany, Italy, Netherlands, United Kingdom, and the United States. For example, the International Development Agency (IDA) and the International Finance Corporation (IFC) jointly provided USD 3 million starting 2001 to help the GoR with privatisation and updating its commercial law through technical assistance, capacity building and bank restructuring. In 2007, the IFC complemented this support with a separate project of USD 3.2 million for investment climate reforms.

Partially as a result, Rwanda has become increasingly attractive to foreign investors, with its registered investments rising significantly during and after the reforms—net FDI inflows grew from USD 8 million in 2000 to USD 111 million in 2013. Rwanda has also benefitted from its improved World Bank's Doing Business ranking, going from 158th country in 2006 to 46th (but second in sub-Saharan Africa) in 2014.

Energy needs and policies

8. Despite these improvements, infrastructure bottlenecks still remained a significant constraint to economic growth and human development in Rwanda. For example, while energy capacity grew from 25MW in 1994 to the current 155MW, the access rate to electricity of 22% was still low compared to the average sub-Saharan Africa's rate of 31%[12]. The GoR has therefore set targets in the Vision 2020, EDPRS, and the "Electricity Development Strategy 2011-2017" for the energy mix and access to electricity for basic social services[13]. In order to meet this goal, USD 500 million investment per year will be required, almost half of it being expected to come from public resources[14].

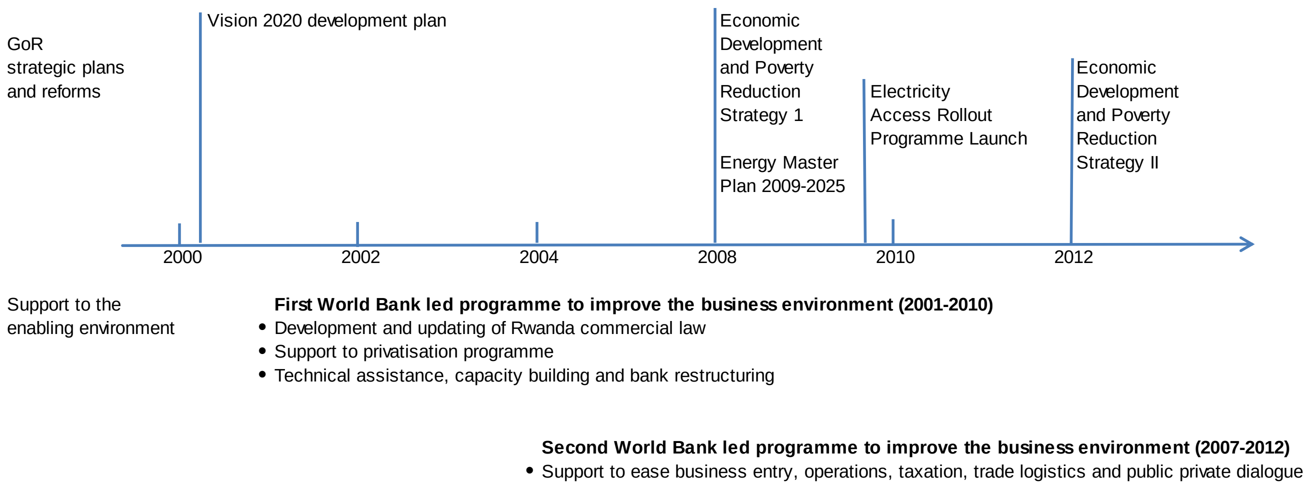
9. In 2009, GoR adopted a new National Public Investment Policy that underlined the potential of PPPs in infrastructure, while maintaining sustainable debt ratios. In order to ensure value-for-money, the GoR established a PPP unit and a comprehensive framework for PPP investments[15].

10. Development partners actively supported these energy-specific strategies and policies. In particular, the Electricity Access Rollout Programme (EARP) adopted in March 2009, which was instrumental in the development of the national grid's reach and capacity[16][17], was supported by Belgium, European Union, Japan, Netherlands, African Development Bank, World Bank, IFC, Arab Bank for Economic Development in Africa (BADEA), The Organization of the Petroleum Exporting Countries (OPEC) fund for International Development, and the Saudi Fund. To implement this, the GoR and development partners adopted a Sector Wide Approach (SWAp) for the energy sector whereby each

development partner engaged to undertake one or several projects under the Government leadership. Here, access to electricity was treated as a whole supply chain from power generation to electrification.

11. The SWAp had a direct impact on the success of the Gigawatt project: the Rwanda Energy Water and Sanitation Authority (EWSA), the state-owned enterprise (SOE) in charge of the production and distribution of electricity in the country at that time had invested in the electricity network before project inception to expand the grid. As a consequence, the GoR was able to guarantee a certain purchase price for the electricity that would be produced by Independent Power Producers (IPPs) such as Gigawatt Global Rwanda. Indeed, EWSA has to pay for the electricity produced by Gigawatt whether it is able to sell it back to its customers or not. According to FMO, Norfund and Gigawatt, the soundness of the Power Purchase Agreement (PPA) between EWSA[18] and Gigawatt Global Rwanda was key in assuring project profitability.

Figure 1. Timeline of the reform of the enabling environment



Project description

12. Developed in this context, the Gigawatt Power Plant project consisted in the design, construction and operation of an 8.5 MW solar photovoltaic power plant representing roughly 6% of the production capacity of the country. It is located 60 km away from the capital of Kigali in the Agahozo-Shalom Youth Village, a community funded by a charity that provides accommodation and education for the youth orphaned during and after the genocide. The project was supported by various development partners such as the US Overseas Private Investment Corporation (OPIC), the Energy and Environment Partnership (EEP) Programme—which is co-financed by the Ministry for Foreign Affairs of Finland, the UK Department for International Development (DFID), and the Austrian Development Agency (ADA)—FMO, Norfund and PIDG. The project reached financial close in February 2014 and started operating in July 2014.

III. Chronology of Events and the Role of Development Partners

Project initiation

13. In early 2012, Gigawatt Global started investigating new investment opportunities in sub-Saharan Africa. After reviewing seven to eight countries, the Managing Director visited Rwanda to meet with local representatives of the Agahozo-Shalom Youth Village, representatives of EWSA, and several ministry officials who emphasised the good business environment of Rwanda. These meetings with Rwandan

officials, combined with the political stability, low corruption, a strong local partner—the Agahozo-Shalom Youth Village—, clear land regulations[19] and high demand for energy, convinced him of the viability of the project.

14. In September 2012, a Memorandum of Understanding (MoU) was signed between the GoR and Gigawatt. While the MoU required a feasibility study to be carried out in three months, as the Agahozo-Shalom Youth Village owned the land, it was not difficult to conduct an environmental and social assessment of the project in a short period. Furthermore, the project required no population displacement, which was one of the reasons this particular site was chosen. The feasibility study was therefore delivered within the time limit. At the end of December, Gigawatt Global established and registered Gigawatt Global Rwanda, a Special Purpose Vehicle (SPV)[20]. Revenues generated by Gigawatt Global Rwanda are currently used to cover operating costs and to service the debt.

15. After the GoR's review of the feasibility study, Norton Rose Fulbright was engaged to provide comprehensive legal services – including PPA negotiations, land lease negotiations, equity and debt financing and EPC/O&M documentation – to Gigawatt Global at significantly reduced fees. This helped Gigawatt Global to effectively negotiate the PPA, which was signed by EWSA, as well as the Concession and Implementation agreement, which was signed by the Ministry of Infrastructure. Since the PPA set the terms for the sale of electricity by Gigawatt Global to EWSA, whose payment obligation was to be backed by GoR, Gigawatt Global also obtained a government guarantee by the Ministry of Finance and Economic Planning. At the same time, GoR had a limited track record in providing sovereign guarantees to large scale private sector-financed energy projects[21].

16. The PPA contains Deemed Delivered Energy provisions, mitigating grid unavailability risk – critical for the project. If arbitration should be required, it would be settled in accordance with the United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules in effect on the date of the signing of the PPA; the seat and venue would be Mauritius; the case would be administered by the London Court of International Arbitration (LCIA) – Mauritius International Arbitration Centre (MIAC) Arbitration Centre. Having secured these agreements, Gigawatt Global was confident in finding debt and equity providers, which was needed within a 6 month (later extended to 7 month) deadline given by GoR to reach financial close.

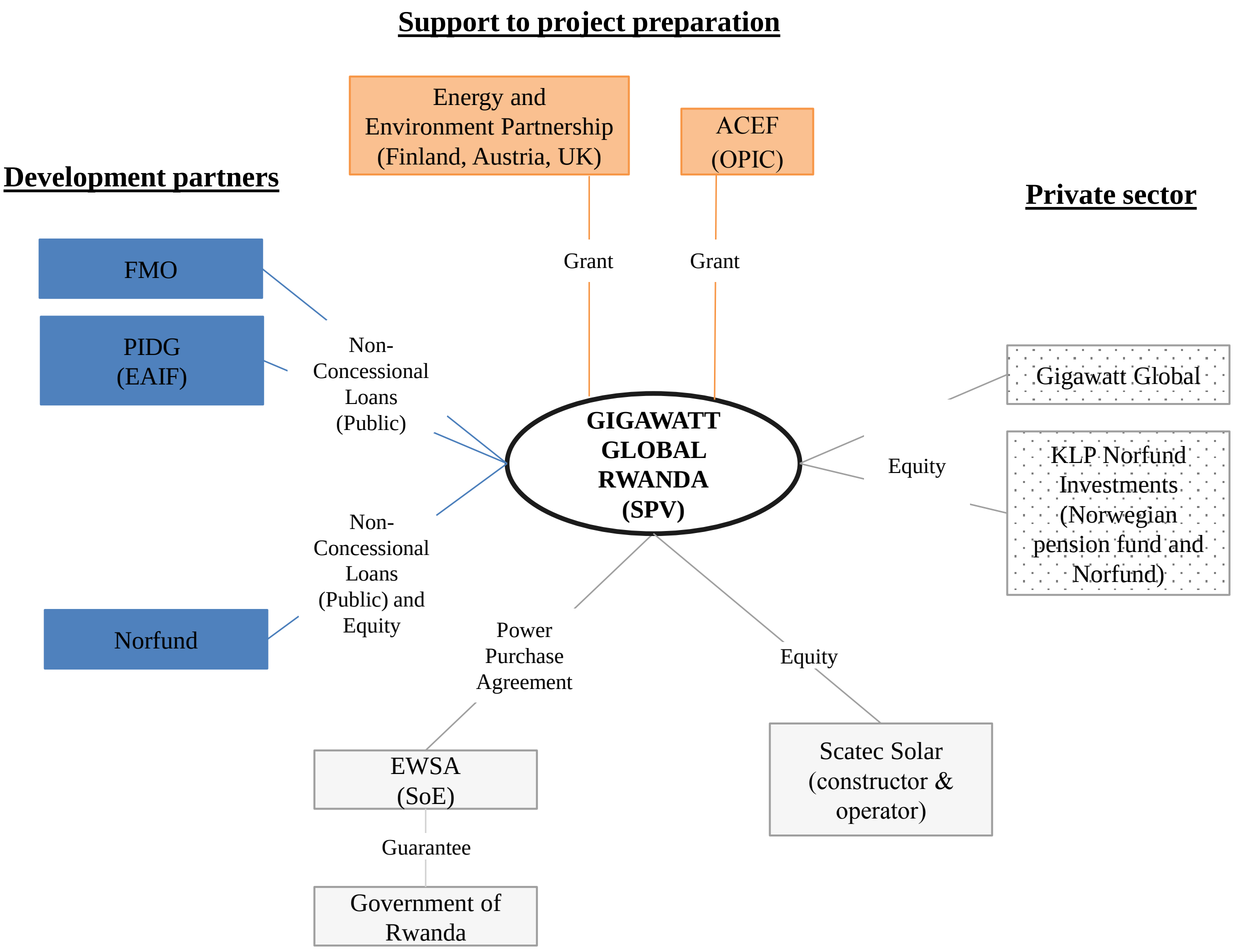
Negotiation with development partners and choice of a construction company

17. Gigawatt received two grants to carry out project preparation: 245,000 Euros (roughly USD 310,000) from the EEP Programme which promotes renewable energy, energy efficiency and clean technology investments—to cover part of the legal fees and part of the costs for engineering studies and technical advisory services; and USD 400,000 by OPIC[22] to cover part of the legal fees and technical advisory costs. In August 2013, Gigawatt Global Rwanda initiated a Request for Proposals to engineer, procure, construct, operate and maintain the 8.5 MW solar plant. After receiving 17 bids, Scatec Solar, a Norwegian company specialised in solar power, was selected. Scatec also provided a significant part of the equity to the Special Purpose Vehicle (SPV) and currently holds a 43% stake of the SPV's equity ownership.

18. Simultaneously, Gigawatt Global contacted several potential debt providers who engaged in serious discussions. Among these, FMO was able to move the fastest. Furthermore, Gigawatt Global trusted that they could meet the deadline. The Emerging Africa Infrastructure Fund (EAIF) —a fund in PIDG that had been launched and managed with the help of FMO in the past, and with which Gigawatt Global had a good relationship – agreed to provide 50% of the debt. The fact that EAIF and FMO project managers had already worked together on another energy project in Rwanda helped. Thus FMO took the lead on the debt package with EAIF. In addition, Norfund agreed to provide a mezzanine loan and equity

financing, as well as additional equity via a vehicle (KLP Norfund Investments) jointly owned by Norfund and Norwegian pension fund, KLP (See Figure 2).

Figure 2. Contractual Arrangement of the Gigawatt Project



Finalisation of the contractual arrangement

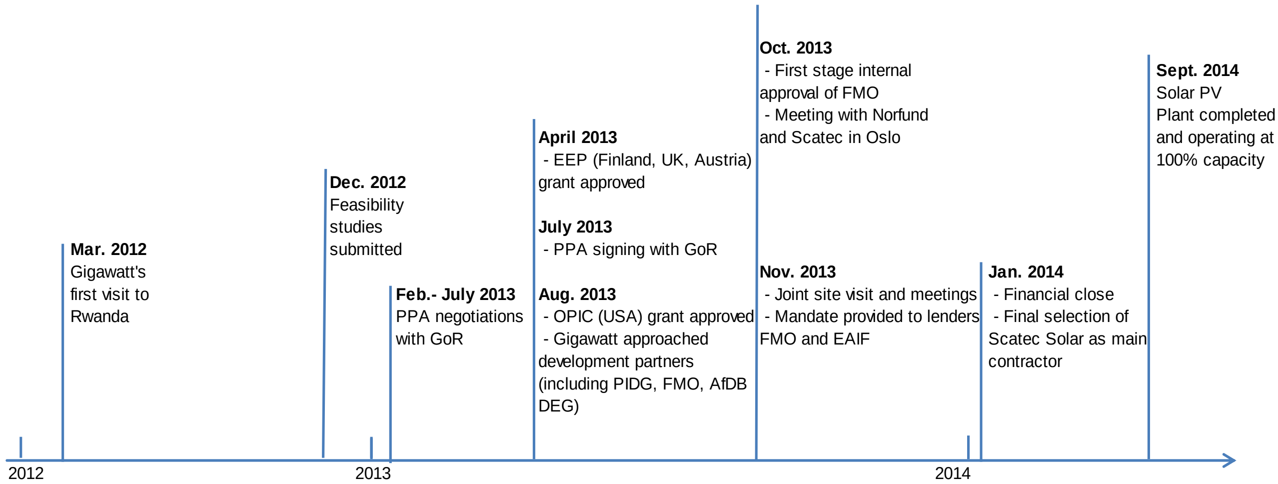
19. The executed Concession and Implementation Agreement signed in July 2013 included a waiver of the withholding tax on interest paid to lenders. This created a level playing field between DFIs and Multilateral Development Bank (MDBs), as the latter had a statutory right to this waiver while DFIs did not. By the end of December, the drafts of the technical, environmental and social due diligence report and the Common Terms Agreement and were received. In January 2014, Gigawatt obtained from the Rwanda Revenue Authority a tax code interpretation judgement on a number of ambiguous issues. Key financing documents were signed on January 31, 2014. Conditions Precedent were satisfied and the project reached financial close on February 14, 2014.

Project construction

20. The solar power plant was built on land belonging to the Agahozo-Shalom Youth Village. Land lease revenues from the SPV are expected to help pay for a portion of the Village's accommodation and educational costs. During the construction period, Gigawatt Global, in association with SMA Solar

Technology AG, provided specialised training in Germany for engineers from the government-owned utility, EWSA, and plans to provide training on solar power to students of the Agahozo-Shalom Youth Village. Scatec Solar was in charge of the engineering, procurement and construction of the 8.5 MW solar power plant, as well as its operation and maintenance, by strictly adhering to the IFC Performance Standards on Labour and Working Conditions. Overall, 300 direct jobs – the vast majority of them from the local district – were created during the construction phase[23] before the plant became fully operational in mid-September (See Figure 3). And local workers received significant training both in building photovoltaic (PV) plants and in working with world-class health and safety standards.

Figure 3. Timeline of the Gigawatt Project Development



IV. Financing of the Project

Project Preparation Costs

21. The project preparation benefitted from two grants amounting to USD 710,000 from EEP and OPIC, which covered major costs for engineering studies, legal fees and technical advisers. Gigawatt also spent significant amount of its own resources for the preparation, but information on the exact amount is unavailable (see Table 1).

Table 1. Distribution of Project Preparation Costs

Institution	Type	Amount (USD)
Energy and Environment Partnership (Finland, Austria, UK)	Grant	310,000
US-ACEF (OPIC)	Grant	400,000
Gigawatt	Own resources	Significant

Source: Gigawatt Global

Project Costs

22. The total construction cost for the solar plant amounted to USD 23.7 million, of which the official development partners financed 91%: FMO and EAIF provided senior loans (38% each) and Norfund provided a mezzanine loan (10%). Norfund also provided equity to the project on its own and

together with the Norwegian pension fund KLP. These two equity investments represented 6% of project costs. The remaining 9% was funded by the constructor and operator Scatec Solar (6%) and Gigawatt Global (3%) (see Table 2).

Table 2. Distribution of the Solar Plant Project Costs

<table>
<tr><th></th><th>Institution</th><th>Nature</th><th>Amount (USD million)</th><th>Share of total</th></tr>
<tr><td rowspan="6">Development Partners</td><td>FMO</td><td>Senior debt</td><td>8.9</td><td>38%</td></tr>
<tr><td>PIDG (EAIF)</td><td>Senior debt</td><td>8.9</td><td>38%</td></tr>
<tr><td>Norfund</td><td>Mezzanine Loan</td><td>2.4</td><td>10%</td></tr>
<tr><td>Norfund</td><td rowspan="2">Equity</td><td rowspan="2">1.4</td><td rowspan="2">6%</td></tr>
<tr><td>Norfund KLP Investments</td></tr>
<tr><td>Subtotal Development Partners</td><td></td><td>21.6</td><td>91%</td></tr>
<tr><td rowspan="3">Private Sector</td><td>Scatec Solar</td><td>Equity</td><td>1.5</td><td>6%</td></tr>
<tr><td>Gigawatt Global</td><td>Equity</td><td>0.6</td><td>3%</td></tr>
<tr><td>Subtotal Private Sector</td><td></td><td>2.1</td><td>9%</td></tr>
<tr><td colspan="3">Total Construction Costs</td><td>23.7</td><td>100%</td></tr>
</table>

Sources: FMO, OPIC-ACEF, Gigawatt Global, Bloomberg, Israel21c. Please note that Norfund KLP Investments is a joint investment vehicle set up between Norfund and KLP, a pension fund, which can be categorised both as development partner and private sector.

V. Key Findings for Development Partners

23. The objective of this case study was to identify the factors and roles of development partners that contributed to private sector participation in infrastructure. The following are the findings. They are expected to be consolidated with those from other case studies to generate general lessons which would form the basis of guidance in mobilising private investment.

- ***Limited leveraging effect.*** The Gigawatt case study highlighted the significant role that development partners played in supporting the private sector for infrastructure projects. They provided 91% of the funding for this project through grants, debt and equity. In terms of mobilising financing from the private sector by the official development partners, however, the equity provided by private actors amounted to 9% of the total project costs, which was relatively small.

- ***Investment climate and project preparation***. Since the early 2000s, the GoR embarked on reforms to stabilise the business and investment climate with support from development partners. This improvement of the enabling environment was key in convincing Gigawatt to invest in Rwanda. Development partners also provided significant support to fund legal fees, engineering studies and technical advisory services during the project preparation phase which was key in reaching close. **Therefore it is important for development partners to support the host government's reforms to improve the investment climate which reduce the costs of doing business as well as to finance project preparation.**

- ***Country priority.*** The GoR elaborated a Development Strategy for the electricity sector, including renewables. At the same time, GOR offered tax and financial incentives as well as a guarantee of EWSA financial liabilities and strong support from the Rwanda Development Board, which acted as a lead co-ordinator for the GoR. These factors helped the project reach financial close in record time. **Development partners should therefore ensure that the project falls within the partner country's long-term development strategies and sectorial priority.**

- ***Country leadership and commitment.*** The Government's strong leadership and commitment to the project were key in reaching financial close. The GoR set short deadlines for the private sponsor to carry out feasibility studies and, after the PPA was signed, to structure the financial package and reach financial close. At the same time, GoR offered tax and financial incentives as well as a guarantee of EWSA financial obligations. The Rwanda Development Board acted as a lead co-ordinator for the GoR, helping the project move forward in a timely manner and helping the Project reach financial close in record time. **Therefore, development partners should ensure that there is strong leadership and commitment to the project by the host Government, including in financial commitments.**

- ***Build on Experiences.*** The development partners capitalised on previous experience in funding energy projects in Rwanda and the sub-region. For example, FMO was able to obtain quick approval to fund this project as it had already significant involvement in similar types of energy projects. This was instrumental in convincing other development partners to join the financing pool. Furthermore, FMO and EAIF had previously worked together on similar projects, which facilitated co-financing for this project. **Therefore development partners should capitalise on experience, knowledge, and established relationships in financing similar projects**.

VI. Questions for AGID

24. AGID members are invited to provide further comments to the above case study, particularly regarding the role of development partners in leveraging private investment for infrastructure.

ANNEX I – LIST OF INTERVIEWEES

(Phone, Conference, E-mail)

Surname	First Name	Organisation	Job Title
van Meeteren	Bernhard	FMO	Investment Officer
Baugerud	Bjornar	Norfund	Investment Officer
Motzen	Chaim	Gigawatt Global	Co-Founder and Managing Director

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[16] Including the African Development Bank, the World Bank, the International Finance Corporation, the governments of Belgium (through BTC) and The Netherlands, the Arab Bank for Economic Development in Africa, the European Union, Japan, the OPEC fund for International Development, the Saudi Fund.

[17]World Bank (2013), "Energy Sector Management Assistance Programme – Knowledge Series 013/12, Rwanda: Extending Access to Energy, Lessons from a Sector-Wide Approach (SWAp)" http://www.esmap.org/sites/esmap.org/files/ESMAP_Energy_Access_RwandaSWAp_KS013-12_Optimized.pdf

[18] World Bank (2014c), "Live Wire 2014-22, Scaling Up Access to Electricity - The Case of Rwanda", http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/06/13/000456286_20140613155917/Rendered/PDF/887030REVISED00220Scaling0Up0Acc....pdf

[19] Rwanda is ranked 15th globally in the "Registering Property" and 34th globally in the "Dealing with Construction Permits" categories of the 2015 World Bank Doing Business Report. See World Bank (2014), "Ease of Doing Business in Rwanda", http://www.doingbusiness.org/data/exploreeconomies/rwanda#registering-property

[20] For more details a detailed explanation of SPVs please see OECD (2014), "Donor support to Public-Private Partnerships: the case of the Dakar-Diamniadio Toll Highway", OECD, Paris, p. 9.

[21] Norton Rose Fulbright (2013), "African IPPs: what are the financing trends? 7th German-African Energy Forum", http://www.energyafrica.de/fileadmin/user_upload/Energy_Africa_13/Presentation_Norton%20Rose_Jackson_Panel%206a_7th%20German-African%20Energy%20Forum.pdf

[22] The U.S.-Africa Clean Energy Finance Initiative (ACEF) is a programme developed by OPIC, USAID, the U.S. Department of State, the U.S. Trade and Development Agency. The initiative provides financial instruments for early stage support i.e. engineering, legal and consulting costs.

[23] Scatec Solar (2014), "ASYV, Rwanda, 8.5 MW", http://www.scatecsolar.com/Business/Rwanda/ASYV-Rwanda-8.5-MW