

BELGIAN DEVELOPMENT AGENCY

FORMULATION REPORT

ENERGY SECTOR:

PRIVATESECTORPARTICIPATIONINTHEGENERATIONANDDISTRIBUTIONOFELECTRICITYFROM RENEWABLE SOURCES

RWANDA

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ABBREVIATIONS

AEEP	Africa-EU Energy Partnership
AFD	Agence Française de Développement
AfDB	African Development Bank
ASYV	Agahozo-Shalom Youth Village
BADEA	Arab Bank for Economic Development in Africa
BE	Kingdom of Belgium
BEEARP	Belgian Contribution to the Electricity Access Roll Out Program (all three components)
BFZ	Bavarian Employers Federation
BNR	National Bank of Rwanda
BRD	Development Bank of Rwanda
BTC	Belgian Technical Cooperation
CB	Capacity Building
CD-EU	Capacity Development for the Energy Utility
CIF	Climate Investment Funds, managed by the World Bank
CPPR	Cooperation Portfolio Performance Review
DGD	Directorate General for Development Cooperation and Humanitarian Aid
DP	Development Partners
E4I	Energy for Impact
EA	Environmental Assessment
EC	European Commission
EARP	Electricity Access Roll-out Program
EDCL	Energy Development Corporation Limited
EDPRS	Economic Development and Poverty Reduction Strategy
EMP	Environmental Management Plan
EnDev	Energising Development
EPD	Energy Private Developers
ESME	Energy SME(s)
ESSP	Energy Sector Strategic Plan
eSWAp	Energy Sector Wide Approach
eSWG	Energy Sector Working Group
EU	European Union
EUCL	Energy Utility Corporation Limited
FDI	Foreign Direct Investment
FIL	financial intermediary loan
GBS	Gender Budget Statement
GDP	Gross Domestic product
GE	Gender equality
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GIS	Geographic Information System
GMO	Gender monitoring office
GoR	Government of Rwanda
GTF	Global Tracking Framework
GVEP	Global Village Energy Partnership (Now E4I)
HIV	Human Immunodeficiency Virus
HR	Human Resources
ICP	Indicative Cooperation Program
ICT	Information and Communication Technology
JICA	Japan International Cooperation Agency
IMF	International Monetary Fund
IMU	Intervention Management Unit
IP	Investment Plan
IPP	Independent Power Producer
IRES	Integrated renewable energy services project
KIST	Kigali Institute of Science and Technologies
kWh	Kilo Watt Hour (unit of energy)
LV	Low Voltage
MDG	Millennium Development Goals
M&E	Monitoring and Evaluation
	IVIICTO Hydro Plant
	Ministry of Foreign Affairs and Cooperation
MINALOC	IVIIIIISTRY OF LOCAL GOVERNMENT
MINECOFIN	winistry of Economic Planning and Finance

MINEDUC	Ministry of Education
MIGEPROF	Ministry of Gender and Family Promotion
MININFRA	Ministry of Infrastructure
MINIRENA	Ministry of Environment and Lands
МОН	Ministry of Health
MoM	Minutes of Meeting
MoU	Memorandum of Understanding
MTR	Mid Term Review
NGO	Non-Governmental Organization
NI	The Netherlands
NWC	National Women Council
O&M	Operation & Maintenance
OM	Operations Manual
PAVG	Pay as you do
	Project Implementation Init
	Project implementation onit
	Public Private Partnership
	Fublic Filvale Failleiship
PRSP	Poverty Reduction Strategy Paper
PSF	Private Sector Federation
PSI	
PSPE	Private Sector Participation in the generation and distribution of Electricity
PSP Hydro	Private Sector Participation in Micro-Hydro Power Supply for Rural Development
PV	Photovoltaic
QCC	Quality Control Committee (DGD)
RAF	Responsible for Administration and Finance
RDB	Rwanda Development Board
RECP	Renewable Energy Cooperation Program
REF	Renewable Energy Fund
REG	Rwanda Energy Group
REMA	Rwanda Environment Management Authority
RES	Rural Electrification Strategy
RSB	Rwanda Standards Board
RURA	Rwanda Utilities Regulatory Agency
SACCO	Savings and Credit Co-operative
SC	Steering Committee
SE4ALL	Sustainable Energy For All
SEA	Strategic Environmental Assessment
SF	Shell Foundation
SHS	Solar Home Systems
SIDA	Swedish International Development Agency
SME	Small and Medium Enterprise
SNV	Netherlands Development Organisation
SOGER	Scaling up Off Grid Energy in Rwanda
SoV	Source of Verification
SPD	small-scale power distributors
SPIU	Single Project Implementation Unit
SPV	Special Purpose Vehicle
SREP	Scaling up Renewable Energy Program
SWAp	Sector Wide Approach
SWG	Sector Working Group
SWOT	Strengths, Weaknesses, Opportunities, Threats
ТА	Technical Assistance
TFF	Technical and Financial File
ToR	Terms of Reference
TWG	Technical Working Group
UN	United Nations
	United Nations Industrial Development Organization
US\$/USD	United States Dollar
WB	World Bank
Wn	Watt Peak
**P	

1 ADOPTED OPERATING PROCEDURE

1.1 Context

1.1.1 ICP Rwanda-Belgium 2011-2014

The Indicative Cooperation Program (ICP 2011-2014) between Belgium and Rwanda, approved on May 18th 2011, allocated a total grant envelope of 55 million euro to the energy sector in Rwanda, split over 4 interventions:

- 1. Improving access to reliable and cost effective electricity services for households and priority public institutions Belgian contribution to Electricity Access Roll-Out Program EARP (€17M)
- 2. Institutional Strengthening and Capacity Building (€5M)
- 3. Increasing electricity supply through development of geothermal energy (€27M)
- 4. Encouraging private sector participation in the generation of electricity from renewable sources, through the establishment of adequate Feed-in-Tariffs (€6M)

Both interventions (1) and (2) were formulated in 2013 and started in 2014. Following a joint decision taken by Rwanda and Belgium to reallocate the funds of the geothermal component (3), the CPPR meeting of December 17^{th} 2014 agreed to split the \in 27M in three smaller interventions. One intervention of \in 5M focuses on the forestry sector. Two other interventions for a total of \in 12M are allocated to support the electricity access roll-out within EARP.

Following the CPPR, the total envelope is split over 6 interventions:

- i. Improving access to reliable on grid electricity services for households and priority public institutions Component 1 BE1EARP (€ 17M)
- ii. Improving access to reliable on grid electricity services for households and priority public institutions Component 2 BE2EARP (€ 12M)
- iii. Improving access to reliable on grid electricity services for households and priority public institutions Component 3 BE3EARP (€ 10M)
- iv. Institutional strengthening and capacity development of electricity utility CDEU (€ 5M)
- v. Forest Management and Support to woody Biomass Energy FMBE (€ 3M)
- vi. Private sector participation in the generation of electricity from renewable sources PSPE (€ 2M)

The present document formulates component (vi).

1.2 Formulation Management and Approach

1.2.1 Formulation steps

1.2.1.1 STEP 1: Preparation of the mission (April 2015)

A careful preparation takes place, with the study of relevant documentation: policies, strategies, available assessments, existing plans, etc....

A list of mandatory documents is established, with the help of the formulation co-manager and BTC colleagues in Rwanda (technical assistants and BTC representation).

All local stakeholders are identified and informed on the formulation plan and timing, in order to guarantee their availability and full participation to the formulation exercise.

Frederik Van Herzeele, Infrastructure Expert, is appointed by BTC as formulation manager.

Hector Mutijima, Manager at BRD, is appointed as formulation co-manager.

The Terms of reference (scenario) were validated by the Steering Committee during the formulation on September 15th 2016. The minutes of the meeting are available in annex.

1.2.1.2 STEP 2 : Formulation missions

Four formulation missions were held by the team. These missions were synchronized with the World Bank missions for the SREP program (to be hosted by BRD).

Missions were done during the following periods :

- 25th of April to 7th of May 2016
- 28th of June to 9th of July 2016
- 25th of September to 7th of October 2016
- 6th to 11th November 2016

For each mission a debriefing was held with all stakeholders.

1.2.1.3 STEP 3 : Writing of the formulation report and the TFF (December - January-2017)

The formulation manager elaborates the Technical and Financial File and the formulation report, in collaboration with the formulation co-manager and the consultant.

The formulation manager collaborates with the different services at BTC (operations desk, controlling, transversal themes) and makes sure that their respective contributions are integrated into the draft TFF.

Stakeholder input (BRD and EPD) was included.

1.2.1.4 STEP 4 : BTC Validation Committee (May 2017)

The document is shared internally at BTC level. An official validation at BTC level is held in Brussels on May 10th 2017.

The idea was discussed at the time of delegating the whole intervention to the World bank, arguing that the World Bank had already taken over a large part of the capacity building activities after the reduction of the PSPE budget from 6 to 2 m€ and that the intervention could be better integrated this way. This option was subsequently abandoned.

1.2.1.5 STEP 5 : further developments

At a meeting between the World Bank, BTC and Mininfra in Kigali in April 2017, the Mininfra expressed the opinion that the strengthening of the private sector should not be implemented by EPD (Energy Private Developers), the private association regrouping all the companies). This beneficiary was removed from the TFF, the only recipient now being BRD.

Besides in a letter to DGD, dated 20 June 2017, (Annex 9.2) BTC questioned the pertinence of the whole project on the basis of the following arguments:

- the private sector in the generation of electricity in Rwanda is not homogeneous; large international enterprises have already taken the available market share and the offer is already bigger than the demand. Those firms have signed Power Purchase Agreements with the utility at a high tariff. There is no more space for on-grid generation projects as the tariffs at which the utility would buy the power (Feed-In Tariff) is now too low to make the projects bankable.
- The share of the market that can be covered by Solar Home Systems is already occupied by

large firms like BBOXX, Mobisol and Ignite. Those companies would not need the funding from the RDB to extent their operations. Small local firms would not be competitive.

- the off-grid mini grid sector is the only possibility for the local private sector to invest. However, in a small densely populated country like Rwanda, there are not many locations where such installations make economic sense, as the distribution grid is already extended. With the relatively low end-user tariffs for the smaller consumers, who are likely to constitute the bulk of the clients, the return on investment will be hard to gain, unless the utility subsidies heavily the private companies.

Those arguments were also presented to MININFRA in a letter sent end of August 2017.

BTC is thus in the opinion that the risk is very high for this intervention not to reach its results, meaning that there would not be enough viable project proposals that would be submitted to BRD.

1.2.2 Formulation Team

1.2.2.1 Partner involvement

In order to assure the implication of the partner, Hector Mutijima, Head of EARP was appointed as **formulation co-manager**. This person collaborates with the formulation manager on all aspects of the formulation.

1.2.2.2 Steering Committee

A Steering Committee approves the present terms of reference. This ad hoc Steering Committee consists of:

- REG Managing Director of EDCL (chair)
- BTC Resident Representative (co-chair)
- MININFRA energy division manager
- MINECOFIN external financing unit
- EUCL Managing Director
- Belgian Embassy Head of cooperation

The same Steering Committee approves the technical and financial file.

The composition of this Steering Committee is reviewed for the implementation of the project.

1.2.2.3 BTC involvement

Experts BTC Brussels

Frederik Van Herzeele was the formulation manager until beginning of June 2017. The TFF was finalized by Muriel Lambert de Rouvroit.

BTC/REG project staff

The BTC/REG-staff of the ongoing EARP and CD EU in Rwanda actively supported the formulation.

They are one of the best sources for sector analysis, stakeholder network information, reference documents and translation of BTC-procedures into practice.

This team also gave technical inputs for the formulation team.

BTC representation

The representation office offers logistic support for the missions and provides early in the process relevant documents, and information on execution modalities ongoing in other Belgian interventions. The

representation facilitates the formulation and is the focal point for all communication throughout the approval process.

Other BTC HQ staff

Other staff involved in the formulation process are :

- Operations Advisor and Manager in charge of Rwanda, for the elaboration of the implementation modalities (TFF chapter 5);
- Transversal experts (gender, environment), for the integration of these themes in the project, including a Gender Budget Scan;
- Controlling Department, for the elaboration of the financial and procurement implementation modalities, budget verification, etc;
- Human Resource partner, concerning the different national and international HR of the project and all the relevant HR related topics

1.3 Validation of the identification

The project identification note (PIN) has been approved by Belgian and Rwandan parts in April 2015. Some clarification is provided hereunder.

1.4 Other aspects of the formulation

1.4.1 On timing/duration of the formulation

The timing of the formulation has been very long (since the signature of the ICP in 2011). The explanation for that is the following :

- Main delay was between the ICP and the project identification (May 2011-April 2015)
- After that, priority was given by the partner (Mininfra), the Embassy and BTC to the EARP programs, to try and synchronise as much as possible the different BE EARP phases in order to fully grasp synergies and to reduce overhead costs
- At the moment to start the PSPE formulation, the initial formulation manager (Yannick Thomas) fell ill (- and soon afterwards left BTC, to be replaced in October 2016 by a new colleague).
- During the formulation, the program's budget was reduced from 6 to 2 M€, affecting also initial ideas and delaying the formulation.

The long formulation period is unfortunate on the one hand, but on the other hand gave the opportunity to fully synchronise with World Bank activities. Also, the formulation could benefit from the framework contract for support in the energy sector, signed in May 2017 and used for PSPE.

1.4.2 On implication of BIO-Invest

The formulation team visited BIO-Invest on several occasions in Brussels. There was a mutual enthusiasm to collaborate.

Key messages were :

- BIO-Invest has a focus on private sector development, through financing projects. In that sense, BIO-Invest could co-finance projects together with BRD, depending on the opportunity.

- For the moment, BIO-Invest invests in renewable energy projects in Rwanda, but *mainly* on very large scale and on-grid projects (>5M€ investments). Examples are KivuWatt and Symbion. BRD and BIO-Invest have already been co-financing projects (together with other financing institutions). Synergies are possible with PSPE, but not really compatible with the (off-grid) SREP windows, that are very labour intensive and have a high overhead cost.
- BIO-Invest declined an opportunity in the past to take over the shares of the Belgian Government in BRD (7.8%), indicating that being shareholder of a public bank falls out of their scope.

The option of signing a cooperation agreement between BTC and BIO-Invest to exchange expertise (especially on project financing, banking, due diligence, ...) was discussed. Although this expertise exists at BIO-Invest, the availability is rather low, but this remains an option to explore.

In any case, synergies are possible, and opportunities (for co-financing, exchanging expertise) that arise during the project need to be discussed.

1.4.3 On the private sector in Rwanda

The private sector in Rwanda seems to be developing at great speed :

- Rwanda has the largest on-grid solar power plant in Sub-Sahara Africa (8,5MW), injecting power into the grid on a PPA base (power purchase agreement). Large hydropower plants are coming on-line soon, as well as more peat and methane power. The electricity "offer" (installed/contracted capacity) is now close to surpassing the real demand, which will put a break on further investments for on-grid electricity generation.
- Due to the interesting business climate, off-grid solar suppliers (solar home systems, solar lamps) are already rallying to Rwanda : BBOXX, Mobisol, Ignite, Off-Grid Electric, ... all have branches in Rwanda and claim very high sales figures already. They already secured financing for scaling-up. If all companies reach their targets, the market will entirely be covered in a few years' time. The main problem encountered by these companies is end-user financing : clients don't always have the capacity to pay for a solar home system, even on a pay as you go basis. The Renewable Energy Fund (REF) intends to solve this problem by providing funds to SACCO's for end-user financing.
- The "technico-economic space" for mini-grids in Rwanda is very small : although mini-grids are certainly feasible in a lot of places from a technical point of view, they are rarely the best choice : due to the already very dense grid, it is often cheaper and more sustainable to connect more clients to the grid than to connect them to a mini-grid.
- To counter the previous option, it could be interesting to let the private sector extend the grid and recover investments through sales of grid electricity. However, this seems to be a political issue, because it comes down to privatising grid electricity distribution, which goes against REG's mission.

A further development of the private energy sector needs to take the above elements into account.

2 ANALYTICAL RECORD OF THE INTERVENTION

2.1 Initial Record

1

1	
Title of the intervention	Private Sector Participation in the generation of Electricity from renewable resources (PSPE)
Intervention number	NN 3017545
Navision Code BTC	RWA 15 096 01
Dentre en la stitution	Ministry of Infrastructure - MININFRA
	Ministry of Economy and Finance (MINECOFIN)
Length of the intervention	72 months
Duration specific agreement	72 months
Date of the intervention	To be specified – 2016/2017
Contribution of the Partner Country	To be specified during the formulation
Belgian Contribution	6.000.000 EUR
Sector (CAD codes)	Main sector: 23030 - Energy : Energy production (renewable sources)
Brief description of the intervention	The project aims to support the scaling-up generation of electricity by encouraging the private-sector's involvement through financial, legal and regulatory framework's improvement in order to promote investor-friendly environment.
Global Objective	The energy sector is able to provide sufficient, reliable and affordable energy for all Rwandans
Specific Objective	The generation of electricity from renewable resources is increased by the participation of the private sector supported by the intervention.
Results	To be finalized during the formulation

2.2 Final Record

Title of the intervention	Private sector participation in the generation and distribution of electricity from renewable sources
Intervention number	NN 3017545
Navision Code BTC	RWA 15 096 11
Partner Institution	Ministry of Finance and Economic Planning (MINECOFIN)
Length of the intervention	36Months
Duration of specific agreement	48 Months
Estimated date of start from the intervention	2017
Rwandan Contribution	Estimated at 450,000€
Belgian Contribution	€ 2,000,000
Sector (CAD codes)	Main sector : 23030 Energy – Production of Energy (renewable sources) 23040 Energy – Electricity transmission and distribution Sub-sector : 23010 Energy – Energy policy and management
Brief description of the intervention	Support the private sector involvement in generation and distribution of electricity in Rwanda
Global Objective	The energy sector is able to provide sufficient, reliable and affordable energy for all Rwandans
Specific Objective	The generation and distribution of electricity from renewable resources is increased by the participation of the private sector supported by the intervention.
Results	 BRD is able to analyze the viability of project proposals BRD is able to proactively identify a pipeline of potentially viable projects and to assist the private sector to develop them

3 SECTORAL CONTEXT

See TFF for the general sectoral context (energy sector/private sector participation). Here below an overview of the Belgian contribution to the energy projects in Rwanda is given.

3.1 Belgian sector operational experiences

3.1.1 Past BTC projects

3.1.1.1 EPRER

Project name	EPRER : Access to electricity for the rural population by utilization of renewable energy
Description	Interconnection of the electric lines of the West (Rustiro, Rubavu) and the South (Nyaruguru)
	Electrification of 50 health centers with solar energy.
	Construction of the Micro-hydro power plant of Rukarara II (2MW).
	Financial support of the national and regional institutions of energy EWSA and that of EGL.
Location	Southern, Northern, Eastern and Western provinces of Rwanda
Duration	36 months + 12 months
Budget	€ 17 532 659 (Be) € 1 801 000 (GoR)
Lessons learned	 Build-up the capacity in EWSA and retain skilled staff Stabilize the unrealistic energy strategy Improve stakeholders activities alignment Follow-up maintenance strategy Follow-up administration processes (expropriations, authorizations, etc.) to ensure that delays are not caused by bureaucracy Take into account slow procurement process

3.1.1.2 MCH I & MCH II

Project name	MCH : Construction of micro hydro power plants
Description	Construction of the Micro-hydro plant of Keya (2.2 MW), Nkora (0.68 MW) and Cyimbili (0.30 MW)
Location	Western province, Rutsiro and Rubavu districts
Duration	48 months
Budget	€ 8.134.492 (Be) € 180.000 (GoR)
Lessons learned	 Take into account the lack of capacity in local civil works companies Improve operations and maintenance of the installations by the owner

-	Focus on analysis and management of the water turbidity
	(de-silting, riversides management, etc.)

- Follow-up administration processes (expropriations, authorizations, etc.) to ensure that delays are not caused by bureaucracy
- Improve BTC visibility for the beneficiaries

3.1.1.3 IREARPPP

	Project name	IREARPPP : Increase rural energy access in Rwanda through public private partnership
	Description	Construction of the Micro-hydro power plant of Rukarara II (2MW).
	Location	Southern province, Nyamagabe district
	Duration	60 months
	Budget	€ 4.125.000 (UE)
2111	Lessons learned	 Focus on early contract transparency to avoid future contractual issues Strengthen presence on construction site to insure that the planning is followed by the contractor Build-up the capacity in EWSA and retain skilled staff Follow-up administration processes (expropriations, authorizations, etc.) to ensure that delays are not caused by bureaucracy
3.1.1.4	KIKI	
	Project name	KIKI : Construction of the 30 kV power transmission line Kigali- Kiyumba
	Description	Medium-voltage line and its extensions cover a total distance of over 80 km, while the low voltage line covers over 20 km in the districts of Kamonyi and Muhanga.
	Location	Southern province : Districts of Kamonyi and Muhanga
	Duration	48 months
	Budget	€ 3 750 000 (Be) Rwf 183 000 000 (GoR)
	Lessons learned	 Build-up the capacity in EWSA and retain skilled staff Follow-up administration processes (expropriations, authorizations, etc.) to ensure that delays are not caused by bureaucracy

3.1.2 Ongoing BTC projects

3.1.2.1 CD-EU

Project name	Capacity Development – Energy Utility
Description	The goal is strengthen the functioning and performance of the Electricity Utility within EWSA.

Specific Objective: "The Electricity Utility is able to provide, in a sustainable way, reliable energy to its customers."

Location	Kigali + one pilot district
Duration	54 months
Budget	5 million EUR

3.1.2.2 BE1-EARP

Project name	Energy Access Roll-Out Program, Belgian Contribution Phase 1
Description	The specific objective is to improve the access to reliable on-grid electricity services for households and priority public institutions in rural Rwanda.
Location	Eastern Province + Kigali
Duration	48 months
Budget	17 million EUR

3.1.2.3 BE2-EARP

Project name	Energy Access Roll-Out Program, Belgian Contribution Phase 2
Description	The specific objective is to improve the access to reliable on-grid electricity services for households and priority public institutions in rural Rwanda.
Location	Eastern Province + Kigali
Duration	48 months
Budget	12 million EUR

3.1.2.4 BE3-EARP

Project name	Energy Access Roll-Out Program, Belgian Contribution Phase 3
Description	The specific objective is to improve the access to reliable on-grid electricity services for households, businesses and priority public institutions in rural Rwanda.
Location	Eastern Province + Kigali
Duration	48 months
Budget	10 million EUR

3.2 Interventions by other donors and possible synergies

Many development partners are involved in different activities of electricity generation and access. The Kingdom of Belgium and the EU, through the BTC, have in the past supported the construction of several MHP projects and electrification projects across the country. EnDev Rwanda program is known to have spearhead the private sector participation in MHP development in Rwanda. The WB is initiating the setup of the SREP Investment Plan for Rwanda, planned to be roll-out in 2017. Since the WB has been the lead donor in the past, most donors have aligned with its strategy. WB, OFID, BADEA, NL, Saudi Fund, JICA and AFD have contributed to the first phase of EARP. The second phase is involving WB, OFID, BADEA, Saudi Fund, NL, AfDB, Belgium, AFD and EU.

The energy SWAp has been created in order to reduce the fragmentation of donor aid flows and to create synergy between all involved parties. BTC is actively involved in managing the eSWAP. The CD EU intervention of the current Belgian-Rwandan ICP is working on the three levels of capacity building (individual & equipment, organizational, and institutional). Methodological and practical coherences are being developed with the EARP CB component. Regular joint meetings between BTC interventions within REG are held to foster dialogue and synergies. The PSPE should be part and parcel of the ongoing institutional level CB so that private organizations can contribute to the EARP with maximum efficiency

Many initiatives aiming at involving the private sector in the electricity generation have so far been initiated in Rwanda, mostly for hydropower and more recently for a larger variety of energy sources.

BTC/CTB: In 2008, MININFRA, supported by BTC, conducted a countrywide MHP atlas, the atlas was the very first compilation to provide a picture of Rwanda's hydroelectric resource potential. It listed more than 300 potential SHP sites through the entire country and confirmed Rwanda's considerable SHP potential, which is one of the most significant in East Africa.

In 2011, BTC implemented several programs that aimed at increasing generation from renewable sources. EPRER program -Access to Electricity for Rural Population through Renewable Energy, funded the construction of MHPs, the provision of solar power to isolated health facilities and supported the increase of access to electricity through the construction of transmission and distribution lines in the project areas. The IREARPPP program - Increase Rural Energy Access in Rwanda through Public Private Partnerships, supported the constructions of micro hydro power plants and photovoltaic installations. The construction of most of these projects was undertaken by local companies, and on course, a lot of capacity was acquired locally. Three MHPs plants were commissioned, with installed capacity totaling around 3.2MW. Through the construction, which was undertaken by local contracting companies, a lot of design and engineering was carried out locally. BTC, during the same period, also financed several transmission line projects that connected MHP plants to the national grid. The ongoing interventions come under the Indicative Cooperation Program (ICP 2011-2014) between the Kingdom of Belgium and the Government of Rwanda (described in Chapter 1).

EnDev: In 2006, through the PSP Hydro project took the lead and introduced a PPP approach in microhydropower development in Rwanda. The approach provided significant leverage to public funds, at the time when the Government was in urgent need of more investment in the sector.¹ PSP Hydro financial subsidy, also called Viability Gap Funding, is calculated in a way to ensure the financial viability of the project, considering certain financing conditions and approved cost of the project. PSP Hydro's intervention, being the precursor, was also instrumental in the early setup of legal and regulatory framework to govern private sector involvement in energy generation projects. The very first MHPs

¹Between 2002 and 2008, Rwanda, as well as other countries in the region experienced a significant shortage of on-grid power.

operated as IPPs benefited from EnDev support. In 2014, EnDev, jointly with EDCL conducted the first green field tender to develop MHP sites. During the same year, **EnDev launched the Result Based Financing component (RBF)**. Companies under contracts benefit from result based incentives upon sale of solar lighting products and/or providing new access to electricity through mini-grid connections.

GVEP (now E4I, Energy for Impact) : In 2014, the WB and EWSA signed an agreement under the Energy SMEs (ESME) to provide funds for several hydro projects and for companies venturing into the sale of solar lighting products. Under the same agreement, GVEP assisted in preparing a pipeline of projects and to provide TA and monitoring of the companies that benefited from the funds. **GVEP is also implementing the Scaling-up off-grid energy in Rwanda, SOGER**. The project aims to grow sustainable off-grid renewable energy markets by supporting private sector companies to deliver energy access to an estimated 77,000 people in poor rural areas. Funded by SIDA, the project involves a facility to support small isolated mini-grid projects, including small and pico hydro projects, providing electricity to rural communities. It also focusses on increasing productivity for small farmers through access to appropriate solar powered irrigation systems.

RECP: The Africa-EU Renewable Energy Cooperation Programme (RECP) is a multi-donor program that supports the development of markets for renewable energy in Africa. It was recently launched by more than 35 African and European Ministers and Commissioners under the Africa-EU Energy Partnership (AEEP). By catalyzing the development of African renewable energy markets, the RECP intends to contribute to:

- Promote access to energy supporting sustainable economic growth and poverty eradication, within a sustainable development path.
- Develop value chains providing employment opportunities for men and women and business opportunities for African and European businesses.
- Enhance energy security and mitigating the impacts of volatile fossil fuel prices.
- Mitigate climate change by substituting fossil fuels, and to climate change adaptation by enhanced energy value chain and energy system resilience.

Rwanda is one of the focus countries where RECP intends to first become operational. There are 4 windows of intervention, one of which is access to international finance and as such of interest to PSPE.

SNV: The organization is currently implementing two energy related projects. The projects that support the private sector through business development, technical assistance and capacity building. The integrated renewable energy services projects (IRES)supports companies or entrepreneurs to design and develop innovative business models and distribution channels for Solar pico-PV products. Through rural exhibitions, private companies reach out to rural areas and hence new trade partnerships between local cooperatives and companies. The second intervention is the Pico hydro sector support project. The project provides technical training and coaching to small hydro energy enterprises. In addition to training, the project supports local turbine manufacturing and the establishment of a pico-hydro association of Hydro entrepreneurs in Rwanda.

UNIDO: Between 2006 and 2009, MININFRA, with the support of UNIDO developed five off-grid MHP projects, applying a low-cost technology. The approach suggested that, upon commissioning, the plants would be handed to the local administration, for the management and operation. However, the approach proved to be not very adapted as all plants were handed to back to REG for management and operation.

World Bank

The World Bank supports three main activities in the sector: the *Energy Access project*, which is closing down and that largely supported the EARP, the *SREP program* described below, and a proposed *Development Policy Loan*, consisting mainly of budget support that is expected to start in 2017, and that

is designed to further improve the efficiency and transparency of the electricity sector and increase electricity access.

REF : The Climate Investment Facility managed by the World Bank operates the global USD 780m Scaling Up Renewable Energy Program (SREP) funding window for scaling up renewable energy program. SREP is expected to empower a transformation in developing countries by demonstrating the economic, social, and environmental viability of renewable energy. It will leverage private investments sourced and through development banks. For Rwanda, SREP has set aside a 50million USD allocation, to be managed by BRD. (See below)

RENEWABLE ENERGY FUND/SREP

Synergies

The Renewable Energy Fund (REF) under SREP is by far the most important upcoming program for the private energy sector, and is described more in detail here. Synergies with the REF program are :

- Joint activities for reach-out and capacity building of BRD, in harmonisation
- PSPE and RSEP will both use, but also reinforce, the same unit (energy financing) at BRD, a proper division of labour will be discussed in planning meetings, with an attention for the workload of the BRD staff involved (risk of overstretching staff).
- PSPE is contributing to the success of REF, in the sense that it will improve capacity of BRD to assess proposals for financing by REF, and that it will generate a pipeline of projects for this source of financing (as well as other sources)

Executive summary of REF (from WB Project Appraisal Document – confidential draft)

I. PROJECT DESCRIPTION

 The REF project is a financial intermediary loan (FIL) to GoR as the borrower, funded by the SREP Trust Fund.² GoR will transfer (grant portion) and on-lend (loan portion) the funds to the Development Bank of Rwanda (BRD), which will administer the facility. The project will be structured around two components: (1) Line of credit and direct financing for off-grid electrification; and (2) Technical assistance, capacity building and project implementation support.

Component 1: Line of credit and direct financing for off-grid electrification (US\$44.0 million SREP)

2. This component will set up and operationalize a REF, a local-currency line of credit and direct financing facility that will help address access to finance and affordability constraints in Rwanda in order to accelerate growth of the off-grid electrification market. The REF will provide lines of credit to local financial institutions for sub-loans to households and micro, small and medium enterprises, as well as direct loans to private companies engaged in off-grid electrification (mini-grid developers and potentially locally-registered off-grid solar companies). The REF will use existing country systems to facilitate access to finance for households and businesses, improve affordability of solar electricity services, and maximize geographic coverage.

² Funding for the project will be provided by the Scaling-up Renewable Energy Program (SREP) in low-income countries. The SREP envelope for Rwanda consists of US\$ 50 million, of which US\$ 22.5 million will be provided in the form of grant and US\$ 27.50 million as loan at 0.1 percent interest rate, 40 years maturity (including 10 years grace period). The SREP envelope includes US\$ 0.26 million grant for preparing the SREP Investment Plan (IP) and US\$ 0.8 million grant for preparing the REF project. The former has been fully utilized; any balance remaining from the project preparation grant will be used toward the actual implementation of the REF project.

- 3. The REF will provide access to local-currency financing through the four financing windows described below. This will allow the facilitation of off-grid market development through mobilization of all the key market enablers at the same time: SACCOs, banks (commercial and microfinance), and private companies (mini-grid developers and potentially locally-registered off-grid solar companies).
 - a. Window 1 On-lending through SACCOs to households and micro-enterprises: The window will provide a wholesale line of credit to BRD for on-lending to SACCOs that comply with established eligibility criteria. SACCOs will on-lend the funds to eligible households and micro enterprises for purchasing of at least Tier 1 solar systems.
 - b. Window 2 On-lending through banks (commercial and microfinance) to households and small and medium enterprises (SMEs): The window will provide a wholesale line of credit to BRD for on-lending to eligible commercial and microfinance banks, which will the extend sub-loans to households and SMEs for the purchase of solar systems of at least Tier 1 access level. Eligible SMEs will have to make an equity contribution equivalent to 20 - 25 percent toward the purchase of the system.
 - c. Window 3 Direct financing of mini-grid developers: This window will provide direct financing to eligible mini-grid developers to finance construction of renewable-energy based mini-grid systems. REF will provide "bridge loan" financing until grant funding from existing results-based financing (RBF) programs (e.g., EnDev) becomes available, as well as long-term financing beyond commissioning. REF loans will be used to bring a mini-grid project to commissioning, when RBF becomes available from other donor-funded programs. Selection of projects will adopt a technology neutral approach. Hybrid systems, including diesel back-up, will be eligible for support under the condition that the diesel component is financed from sources other than SREP.
 - d. Window 4 Direct financing of locally-registered off-grid solar companies supporting Tier 1 or higher solar systems: This window will provide direct financing to eligible locally-registered offgrid solar companies offering at least Tier 1 solar-home systems and ongoing maintenance services to its clients through delayed payment options. Eligible companies will have to leverage REF financing 2:1.
- 4. Implementation of Component 1 will commence with Windows 1, 2, and 3 (SACCOs, banks, and minigrid developers), whereas the activation of the Window 4 (locally-registered off-grid solar companies) will be postponed until year two of project implementation. Window 4 will be considered for activation after a detailed assessment of active REF windows' performance is conducted, which is consistent with GoR's approach of attracting private sector investment by incentivizing demand for off-grid services. The detailed performance assessment would look at, among others, the following indicators: (i) total number of off-grid systems supported by the project to date; (ii) number of off-grid systems supported by each window to date; (iii) number of SACCOs, banks, and mini-grid developers participating in the project; (iv) amount of project funds disbursed through each window; (vi) amount of funds on-lent by SACCOs and the banks; (vii) performance of project-related loan portfolios of SACCOs and banks. The project Operations Manual (OM) will describe the process for activation of Window 4 in detail.
- 5. Access to financing for all four windows will be on a first-come-first-served basis to allow for flexibility during project implementation. All SACCOs, banks, mini-grid developers, and locally-registered off-grid solar companies interested to receive REF financing will be required to comply with eligibility criteria agreed with the Bank. For Windows 1 and 2, participating SACCOs and banks will be required to enter

into service agreements with solar companies to ensure that solar systems supported by these windows are appropriately serviced during sub-loans' tenor; participating SACCOs and banks will extend subloans to households and enterprises for solar systems purchases only from companies with whom they have active service agreements. All supported systems will be required to meet the Lighting Global Quality Standards. The Project OM will describe the eligibility criteria and on-lending process for each window.

Component 2: Technical assistance, capacity building and project implementation support (US\$4.94 million SREP)

- 6. This component will provide necessary technical assistance and capacity building to BRD and participating entities (SACCOs, banks, and private companies engaged in off-grid electrification) as well as provide project implementation support to BRD as host of the facility. Technical assistance and capacity building will include, among others: (i) capacity building and awareness workshops for SACCOs, banks, and private companies engaged in off-grid electrification to facilitate partnerships between SACCOs, banks, and the private sector; (ii) technical assistance and capacity building for participating SACCOs and banks to ensure their successful partnerships with the private sector; (iii) capacity building of participating SACCOs and banks to manage energy credit lines (including management, operational, and monitoring and evaluation capacities); (iv) capacity building of the Energy Division of BRD to manage direct energy lending; (v) technical assistance to BRD to develop pipeline of mini-grids projects; and (vi) technical assistance and capacity building for BRD and participating entities on quality assurance and enforcement of technical standards for off-grid solar systems, etc.
- 7. Project implementation support will include, among others: (i) establishment of the Project Implementation Unit (PIU) and provision of operational support to the PIU in the areas of project management, supervision, and monitoring; (ii) outreach to off-grid market enablers and final project beneficiaries; (iii) knowledge-sharing events between participating project entities; (iv) sector-wide knowledge-sharing and project results dissemination workshops; (v) preparation of required studies related to the project, including impact assessment; (vi) preparation of consolidated annual project audits; (vii) public awareness campaigns to final beneficiaries on the benefits and opportunities of off-grid electrification; and (viii) financing of incremental operating costs, etc. Cooperation and co-financing opportunities with other donors, e.g., Belgian Technical Cooperation (BTC), GIZ, Swedish International Development Agency (SIDA), will be explored.

4 ADDITIONAL STUDIES

No additional study has been performed for the formulation exercise.

5 TECHNICAL AND FINANCIAL FILE

See File hereby

6 **RISK ANALYSIS**

See TFF Section 3.5

7 REFERENCES

7.1 Contact List

Name	Organisation	Title	E-Mail	Tel
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8 ANNEXES

8.1 MoM for ToR approval

Minutes of Meeting for

Validation of ToR Formulation of the "Private Sector Participation in the Generation of Electricity from Renewable Sources" – RWA1509611

Kigali, 15th September 2016

Participants:

Present:

Carlos LIETAR- Embassy of Belgium, Development Counselor Claire SCHAMPS, Development Assistant Peace KALISA – MININFRA, ESWAP External Link Tom RWAHAMA – MININFRA, ESWAP Coordinator Robert NYAMVUMBA – MININFRA, Energy Division Manager Laetitia NDUWIMANA – MININFRA, ESWAP M&E Edouard NDAYISABA - EPD Vincent NSABUWERA – BTC PO Livingstone BYAMUNGU – BRD

Benoit PIRET - BTC ResRep

Excused : Christophe BUNZINYA – MINECOFIN

Summary of the presentation and decision:

Mr. Vincent NSABUWERA presented the ToR (see presentation in annex). The presentation was followed by a discussion.

Remarks	Action
Key orientations need to be discussed, with regard	These discussions will take place
to the original orientations of the PIN and the needs of BRD or EPD and others	during the formulation mission
	A thorough briefing is needed at
	the very beginning of the mission
Where is the expertise on private sector	It is provided by the external
development?	expert (page 13)
	BTC to share the CV of the expert
There is need for attention to support the private	It is part of the mission of BRD to

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sector developers to submit bankable proposals	provide technical support to
	private sector developers to
	elaborate their proposals, but
The institutional strengthening of the private sector	constraints exist (see
needs to be included	assessment).
	This will be reminded to the
	formulation team
Information sharing	MININFRA to share the
internation shoring	assessment of the possible host
	institutions for the REF, and the
	RE investment plan
	BRD to share its strategic plan on
	energy and private sector
	strengthening
	EPD to share its strategic plan
	al o to share to concere graphent
	All this before the start of the
	mission
Proper information of the private sector developers	
on the general energy environment, rules and	
regulations should be a point of attention for the	
program (ex: transparency about gird extension	
plans)	1
There is a need to pay attention to direct access to	
funds for private developers, not only to fund the	
projects, but also the preparation of the projects	1
There is a need to identify quick wins in the possible	
direct support to EPD as an association (ex: training	
needs. etc)	1
An effort must be made to involve the line ministry /	MININFRA to contact RDB to
institution in charge of private sector (RDB)	assign a representative to
	participate in the formulation
It was discussed if there is sufficient demand for	
energy projects from private sector that matches	
the foreseen supply of funds (own BRD means 185	
MS over 5 years+ SREP 50 MS also over 5 years).	
The answer is: yes, the demand is there (BRD	
expects its pipeline to exceed that amount)	

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The Steering Committee approves the ToR attached to these minutes. Hector MUTUIMA (BRD) will be the formulation co-manager. He will work closely with the BTC formulation manager.

Signed by:

Carlos Lietar - EMBASSY OF BELGIUM

Robert NYAMVUMBA - MININFRA

Benoit PIRET - BELGHUM DEVELOPMENT AGENCY (BTC)

Livingstone 8YAMUNGU - BRD

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VALIDATION OF TdR FORMULATION OF RWA1509611/PSPE _ **STEERING COMMITTEE MEETING 15th September 2016**

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8.2 Letter to DGD



BELGISCH ONTWIKKELINGSAGENTSCHAP

De heer Bruno van der Pluijm Directeur-generaal DGD Karmelietenstraat, 15 1000 Brussel

CONTACT Mario Goethals ONS KENMERK OP/0/2017/123/JVS UW KENMERK

DINSDAG, 20 JUNI 2017

BETREFT

RWANDA - Formulering van het PSPE project "Private Sector Participation in the Generation and Distribution of Electricity from renewable resources"

Geachte heer Directeur-generaal,

In april 2015 werd de identificatiefiche van vermelde interventie goedgekeurd voor een budget van 6 Mio €. In januari 2016 werd de policy review gestart en in juni 2016 werd de policy review met Rwanda besproken en beslist. De oorspronkelijke reactie van Rwanda op het policy review voorstel was om de interventie volledig te schrappen, uiteindelijk werd het budget naar 2 Mio € teruggebracht. Na de goedkeuring van de referentietermen door de GLOS op 15 september 2016 kon een aanvang worden gemaakt met de formulering. Er werd beslist om het formuleringsproces te synchroniseren met de voorbereiding van de enveloppe van de Wereldbank voor de BRD.

Op 11 april 2017 werd gedurende een GLOS het TFD voorstel besproken. In navolging van deze vergadering volgden een aantal besprekingen tussen de Wereld Bank, BTC en Mininfra waar duidelijk bleek (mail van Mininfra van 24/05/2017) dat Mininfra uiteindelijk niet akkoord gaat met de strategie om de privésector te versterken door een directe ondersteuning aan de beroepsvereniging van privébedrijven van de energiesector (EPD).

BTC komt tot de conclusie dat de privésector voor de opwekking van elektriciteit op basis van hernieuwbare middelen geen homogeen geheel is. Er is een verschil tussen de internationale privésector die al een zeer belangrijke rol speelt in Rwanda, zowel "on-grid" als "off-grid", en de lokale bedrijfjes.

Het PSPE project is meer naar kleinere (lokale) spelers gericht. Voor deze spelers bestaan er o.i. weinig mogelijkheden in de opwekking van elektriciteit op basis van hernieuwbare middelen.

Het "on-grid" elektriciteit aanbod is momenteel (en voor een waarschijnlijk zeer lange periode van 5 tot 10 jaar) groter dan de vraag, via dure aangegane "on grid" contracten en Rwanda zet alles in het werk om de tarieven van alle bestaande (kleinere) "hydro Power Purchase Agreements (PPAs)" te laten dalen. Er bestaat daarom nu en in de komende jaren geen incentive voor de lokale privésector om te proberen "on-grid" elektriciteit op te wekken omdat de aankooprijzen veel te laag liggen door het grote aanbod.

HOOGSTRAAT 147 1000 BRUSSEL T +32 (0)2 505 37 00 F +32 (0)2 502 98 62 E INFO@BTCCTB.ORG WWW.BTCCTB.ORG BELGISCHE TECHNISCHE COÖPERATIE NAAMLOZE VENNOOTSCHAP VAN PUBLIEK RECHT MET SOCIAAL OOGMERK 0264,814.354 RPR Brussel BIJLAGE(N): 0

In "off-grid solar" energie, zijn grote internationale bedrijven reeds aanwezig (BBOXX, Mobisol, Ignite), soms met een nauwe relatie met de Rwandese overheid (zie nota Does aid Work op privé sector). Ze hebben toegang tot veel kapitaal met lage interestvoeten via buitenlandse banken. De kleine lokale bedrijven hebben daardoor te weinig concurrentiemogelijkheden.

De enige mogelijkheid voor de lokale privébedrijven zijn "off-grid mini-grids". Daar ook is er echter steeds minder ruimte. EARP gaat door met de uitbreiding van het al zeer dichte middenspanningsnetwerk en met een zeer ambitieus programma (Programme 1 of the Rural Electrification Strategy) om ongeveer 250.000 "solar home systems" te verdelen. De weinige bestaande opportuniteiten zijn reeds gedekt door andere interventies met andere donoren (EnDev, SIDA, WB).

Onze lopende analyse van EPD toont aan dat de lokale privésector in Rwanda voor opwekking en distributie van elektriciteit op basis van hernieuwbare energie behoorlijk klein is en waarschijnlijk nooit een bepalende rol in de energiesector kan spelen. In de laatste DP groep vergadering heeft ook DFID (die de steun van Shell Foundation aan EPD financieert) twijfels geuit over de efficiëntie van de steun aan EPD.

In het huidig institutioneel kader stelt BTC zich ernstige vragen rond de pertinentie van deze interventie en schatten we het risico dat onvoldoende resultaten worden behaald héél hoog. Door de schaarse opportuniteiten en de ongelijke concurrentie heeft de lokale privésector niet genoeg interesse om te investeren in de productie van energie via hernieuwbare middelen. We zien ons daarom verplicht u het advies te geven om van deze interventie af te zien.

Wij staan ter beschikking om dit formuleringsdossier zo snel mogelijk te bespreken ter voorbereiding van een eensgezind standpunt voor de volgende GLOS in Kigali.

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Directeur Operaties Lid van het Directiecomité

Carl Michiels Voorzitter van het Directiecomité

8.3 Letter from BTC to MININFRA



BELGIAN DEVELOPMENT AGENCY

Attention to

- Mr. Christian RWAKUNDA
- PS MININFRA
- Mr. Alex KANYANKORE
- CEO BRD
- Dr. Ivan TWAGIRASHEMA
 Chairman of the Association EPD KIGALI

CONTACT Benoit PIRET Resident Representative OUR REFERENCE RWA1509611-PSPE-OUT/17/0214

FRIDAY, 25 AUGUST 2017

Subject: Way forward for the finalization of the PSPE project TFF.

Mr. Permanent Secretary, Dear Christian,

Following the request of your services for a number of modifications to the PSPE project document, as proposed in the email of May 24 2017 in annex, some internal discussions took place between Belgium and its development agency BTC. In the meantime, the organisational assessment of EPD is completed (we shared the report on August 18 2017) and MINECOFIN confirmed the priority of the project for the Government of Rwanda.

Nevertheless, some questions remain about the relevance of the project. The PSPE project is more oriented towards small local enterprises that need capacity building for developing bankable projects in the renewable energy sector and that can only access finance locally. The present energy market in Rwanda is not favourable for such investments. Indeed, the feed-in tariffs are low and the need for Rwanda for additional on-grid production is equally low, because of the existence of a pipeline of large international investment projects that will satisfy the forecasted demand in the coming years. Large international firms dominate the individual solar-home systems market. These firms do not need capacity building and can access international financial markets more easily than local companies can. The combination of an aggressive extension of the distribution network, supported by a number of donors and of equally ambitious targets for the expansion of the distribution of individual solar home systems reduces the space for profit-making mini-grid investments. We believe this context is the main reason for the present small size of BRD's energy projects portfolio.

8, KN 47 ST BP 6089, KIYOVU KIGALI T +250 (0)280 300 159 F +250 (0)..... E INFO REPRWA@BTCCTB ORG WWW BTCCTB ORG COOPÉRATION TECHNIQUE BELGE SOCIÉTÉ ANONYME DE DROIT PUBLIC À FINALITÉ SOCIALE ANNEXE(S)

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Of course, the context may change in the future, according to various policy actions and particularly the SREP programme. In the present context, we nevertheless consider the project quite risky.

In order to finalize the project document (TFF), we would like to respond to your requests in the following manner:

1. Removal of EPD component

We agree to remove the direct support to EPD through a grant agreement. The project will consider EPD and its members as "normal" beneficiaries, like any other local company.

We suggest rephrasing the result 3 as: "*BRD is able to assist the private sector to develop viable project proposals*". Consequently, result 2 (BRD is able to proactively identify a pipeline of potentially viable projects) would be somewhat revised in order to avoid overlap with result 3.

2. Structure and proportion of the budget in co-management

- 2.1. We agree that the modality for the required technical assistance is procurement in comanagement rather than the more usual BTC contracted technical assistance.
- 2.2. We agree to simplify the structure of the budget. It is obvious that a detailed budget is indicative and that it is to the implementation team to confirm the exact budget allocation.
- 2.3. Apart from the technical assistance, we also agree to shift some investments and running costs in co-management. The initial reason for having some of them in regie was to speed-up the start-up of the project, as BTC has some framework contracts that allow for a quick start-up of activities. This advantage is less applicable in the project.
- 2.4. We agree that junior experts might not be required in this project. It is a possibility that remains available anyway, should the steering committee approve the need.
- 3. Removal of the electric car

We agree as well. This was more a marketing idea to improve the green image of BRD.

4. Revise budget amount allocated to audit and M&E

As we consider this project risky, we intend to keep the allocated budget for audits and M&E at this early stage. The team will seek synergies and use the budget sparingly.

In addition, we also propose to shorten the duration of the project: the operational duration would be 36 months and the duration of the specific agreement 48 months. Taking into account the suggested changes and the relatively small budget (2 M EUR), we believe this timing will lead to more effective implementation.

COOPÉRATION TECHNIQUE BELGE SOCIÉTÉ ANONYME DE DROIT PUBLIC À FINALITÉ SOCIALE

ANNEXE(S)

If you agree with these suggestions, we can quickly complete the TFF and launch the formal approval process. Should you wish to discuss this letter in a meeting, we remain available at the most suitable time for you.

Since ely, Bendt PIRET Resident Representative, BICCIB 0:30

<u>CC:</u>

- Mr. Johan Debar Belgian Embassy in Rwanda.
- Mr. Carlos Lietar Belgian Embassy in Rwanda
- Mr. Robert Nyamvumba Ministry of Infrastructure
- Mr. Tom Rwahama Ministry of Infrastructure
- Mrs. Peace Kaliisa Ministry of Infrastructure
- Mr. Ronald Nkusi MINECOFIN
- Dr. Lingstone Byamungu BRD
- Mr. Hector Mutijima BRD
- Mr. Edouard Ndayasaba EPD
- Mr. Sam Dargan EPD

8.4 Formulation Mission debriefing



BELGIAN DEVELOPMENT AGENCY

Private sector participation in the generation of electricity from renewable sources (PSPE)

Formulation mission debriefing

PSPE, what was it again?

- · General Objective
 - The energy sector is able to provide sufficient, reliable and affordable energy for all Rwandans
- Specific Objective
 - The generation of electricity from renewable resources is increased by the participation of the private sector supported by the intervention.
- · Private firms invest in renewable energy activities

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Issues to address

- Lots of funding will soon be available to leverage private investments in renewable energy, energy access, rural electrification
 - 50m USD SREP
 - 40m USD BRD/renewable energy
 - Undetermined contribution RECP and ELECTRIFI (convertible debt)
- Capacity of local banks is increasing, but supported energy sector investments still very "traditional" (IPP)
- Local private sector not well organized and somewhat weak
 - · EPD has just started to make a difference

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Issues to address 2

- Regulatory framework not exactly conducive for privately owned generation & distribution
 - Planning grid/off grid remains unclear
 - Rules unclear for compensation when taking over
 - generation/distribution facilities when "the grid comes"
 - Tariffs that can be applied in mini grids unclear
 - Net metering not allowed
 - Program 1 risks distorting the market (free equipment)
- · Many electricity activities, low level of coordination
- · BRD, EPD interested, but may need some support

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PSPE – Private Sector Participation in the generation of renewable Electricity



* EU funds not necessarily earmarked for BRD fund management, but are available for other RW banks too

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* EU funds not necessarily earmarked for BRD fund management, but are a vailable for other RW banks too

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Technical assistance to be provided under PSPE



PSPE – operational aspects

- · Private sector delivery of RE & Access projects
 - · RE & Access projects dealing with PV lanterns, PV systems and Mini grids
 - Grid connected distribution systems are possible too
 - Net metering would greatly increase investments in RE production
- Blend of concessional, commercial and possibly grant financing
- On-lending to SACCOs and local banks to open other implementation avenues
- · Possible risk mitigation fund
- · Needed: a pipeline of bankable projects



PSPE – BTC support

· BTC provides TA to BRD to:

- Deepen knowledge and understanding BRD staffon RE energy project due diligence
 - Gap analysis (capacity BRD) to be done by World Bank in November
 Possibly strengthening the BRD with an energy financing expert
- Building bridges between financing institutions that are especially present in the field (SACCO's, other banks), raising awareness

· Some TA also to be channeled through EPD:

- · for the development of a pipe line of viable projects
 - Support specific elements of EPD's strategic development plan
 - Reach out to all members through EPD platform.
 - Provide business plan advice to local project developers
 International partners team up with local members

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Contractual arrangements

· Proposed support

- BRD: 75-80% of funds available
- EPD: 20-25%
- · TFF to administer BRD's intervention
- Separate grant agreement BTC-EPD
- Determine annual targets to trigger disbursements (both BRD, EPD)

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PSPE Logframe

	Logical of the Intervention	indicators – Tentative target	Sources of verification	Hypotheses
GO	The energy sector is able to provide sufficient, reliable and affordable energy for all Rwandans	The number of households with access to energy is increasing, from all Tiers combined National electricity access rate 100% by 2020 off-grid and on-grid combined	EDPRS M&E reports EUCL statistics Aggregated index of Access to Energy (global tracking framework)	GOR pursues both on-grid and off- grid electricity connections
ŝO	The generation of electricity from renewable resources is increased by the participation of the private sector supported by the intervention.	Significant disbursements in RE generation through investments in PV lanterns, PV systems, and mini-grids by private firms, SACCOS, and local banks after 2 years.	BRD reporting	Use of SREP money leads to Increased access. Program 1/koucher system does not hand out free PV lanterns or systems.
R1	BRD is able to carry out due dilligence of RE project proposals	Nr of project proposals approved	BRD reporting	External TA advisor at BRD full time In years 1 and 2, and 25% In years 3 and 4
R2	BRD is able to proactively identify a pipeline of potentially viable projects	Nr of MOUs signed between BRD and local financial institutions (SACCOs, MFI)	BRD reporting	BRD uses its relationship with other local financial institutions to generate proposals, i.e., agricultural SACCO's that now disseminate PV systems to members
R3	EPD staff is able to assist private project developers to develop viable project proposals	Number of project proposals from private project developers submitted to BRD.	EPD reporting	BTC provides support for EPD's development plan (activities x, y, z)

Lingering doubts

- 5 large international PV companies already crowding each other for the Tier 1&2 sector
- Program 1 voucher system for Ubedehe 1 implemented separately, uncertainty about mechanism
- · Likely prospects for mini-grids over-estimated
 - SEFA feasibility study 20 sites
 - ECA market study

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Technical Assistance

Proposed in REF concept note (based on constraints identified)

- · BRD:
 - Market Development (awareness raising, streamlining supply, market intelligence)
 - Legal & regulatory framework (standard legal agreements, grid codes, tariffs)
 - · Monitoring & evaluation (MTF, baseline and updates)
 - · Capacity building of (commercial) banks (bankability)
- · EPD:
 - · Mini-grid pipeline (feasibility, business models, resource mapping, grid codes, ...)
 - Productive use promotion (focus on appliances/applications e.g. water pumping)
 - · Quality assurance (technical standards & enforcement)

Complementary:

- (Standardised) ESIA (relatively high cost for small projects such a mini-grids) ?
- End-of-life solar product re-use, repair, recycling solutions ?
- Training of solar technicians/electricians through existing training institutes ?
 Data management (grid extension plans, public GIS data, website, ...)
- Communication/capitalisation

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Minutes of Meeting for

Technical Validation of Formulation of the Energy Sector Project

"PSPE"

RWA1509611

BTC, 29 September 2017

Context:

The goal of the meeting is to validate the TFF and approve its transmission by BTC HQ to the Belgian Ministry of Development Cooperation (DGD) for the next step of quality control on the Belgian side, which is the Quality Control Committee (QCC) held in Brussels between representatives of BTC and of DGD.

The steering committee hopes that the QCC will have little comments, making a final steering committee meeting unnecessary, allowing BTC to transmit the complete project file (including a draft of the specific agreement) to the Belgian Minister of Development Cooperation, via the Inspector of Finance, who will then decide on the timing of the engagement and initiate the official approval by both governments that culminates in the signature of the specific agreement between the two countries.

The steering committee expects the specific agreement to be signed in the first week of November 2017. The draft specific agreement will be shared by the Belgian embassy on Tuesday 3rd of October.

Participants:

Belgian Embassy	Carlos Lietar
MININFRA	Tom Rwahama, Peace Kaliisa
BRD	Dr. Livingstone Byamungu, Hector Mutijima
MINECOFIN	Tom Butera, Christophe Bunzinya
BTC	Benoit Piret

Q. \$ RWA1509611 PSPE Technical Validation Steering Committee

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Summary of the discussion:

The following comments have been made and the formulation manager is kindly asked to adjust the TFF on these aspects (when necessary, as indicated by the * next to the author of the remark):

Author	Chapter/Page	Comment
MININFRA	Restructure the results (chapter 3.3)	Change from 3 to 2 results; one directed to BRD PIU (original result 1) and one directed to the market stakeholders (by merging the original results 2 and 3). In this merged result 2, original activities 2.1 and 2.2 are also merged into one activity.
MININFRA	Section on management risks (3.5.2 – page 38)	The risk of confusion of interest between project development and project appraisal is removed thanks to the existing internal governance arrangements in BRD.
MININFRA	Section 5.8	Address more specifically in this section the risk identified on data collection (a clear reference is sufficient).
MININFRA	Implementation duration	36 months is agreed – procurement will be fast-tracked

Besides the comments above, the steering committee approves the project document and its orientations. Some minor edits will be added in track changes in the last version of the TFF. The deadline for editing is Tuesday 3rd of October. This edited version will be attached to this report (will be sent by email to all participants) and is considered as part of the minutes of the meeting.

These minutes will be transmitted to the formulation manager who will adapt the TFF accordingly.

Technical Validation Steering Committee

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RWA1509611 PSPE

Signed by:

Belgian Embassy, Carlos Lietar, Development Coopera	ation Advisor
MININFRA, Peace Kaliisa, ESWAP Donor Coordinator	R
BRD, Dr Livingstone Byamungu, Chief Investment Offic	er Phindubustor
MINECOFIN, Tom Butera, External finance specialist	Zump-
BTC, Benoit Pret, Resident representative	

27/09/2017

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Technical Validation Steering Committee