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Enabel

PRIVATE SECTOR PARTICIPATION IN THE GENERATION AND DISTRIBUTION OF ELECTRICITY FROM RENEWABLE SOURCES

(PSPE, RWA 15 096 11)

RESULTS REPORT 2019/2020

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ACRONYMS

ACCA	Association of Chartered Certified Accountants
BRD	Development Bank of Rwanda
CB	Capacity Building
CEO	Chief Executive Officer
CPA	Certified Public Accountant
DFS	Detailed Feasibility Study
DOA	Deal Origination Agents
EAC	East African Community
EDCL	Energy Development Corporation Limited
EPD	Energy Private Developer
eSWG	Energy Sector Working Group
ETR	End-Term Review
HH	Household
HR	Human Resources
IT	Information Technology
MINALOC	Ministry of local government
MFI	Micro Finance Institutions
MGD	Mini-Grid Developer
MINECOFIN	Ministry of Economic Planning and Finance
MININFRA	Ministry of Infrastructure
MTR	Mid-Term Review
NEP	National Electrification Plan
OSC	Off-grid Solar Company
PAYG	Pay as you go
PIT	Project Information Tool
PSC	Project Steering Committee
PSPE	Private Sector Participation in the Generation and Distribution of Electricity
PV	Photovoltaic
RAFI	Responsible for Administration and Finance
RE	Renewable Energy
REF	Renewable Energy Fund
REG	Rwanda Energy Group
RES	Rural Electrification Strategy
RFP	Request for proposal
RURA	Rwanda Utilities Regulatory Agency
SACCOs	Saving and Credit Cooperatives
SC	Steering Committee
SHS	Solar Home System
SME	Small and Medium Enterprise
TA	Technical Assistant
TFF	Technical and Financial File
ToR	Terms of Reference
WB	World Bank
WD	Working Day

1 INTERVENTION AT A GLANCE

1.1 Intervention form

Intervention title	Private Sector Participation in the Generation and Distribution of Electricity from Renewable Sources
Intervention code	RWA1509611
Location	Kigali
Total budget	€ 2.000.000
Partner Institution	Development Bank of Rwanda
Start date Specific Agreement	15th March 2018
Date intervention start /Start of first TA	04Th October 2018
Planned end date of execution period	30th September 2021
End date Specific Agreement	14th March 2022
Target groups	The beneficiaries of the intervention are: ✓ The Development Bank of Rwanda (BRD) ✓ Private companies (project developers) providing electrification services (mini-grids, PAYG) or disseminating renewable energy equipment, benefitting from access to finance, training and project development support and networking with other (inter)national companies. EPD members can be among those beneficiaries. ✓ End-users, such as rural households; social facilities Rwanda´s financing sector will also benefit from the intervention through financing via BRD (on-lending) through knowledge sharing and by building bridges between financing institutions that are active on the market (SACCOs, banks & MFIs)
Impact[1]	The energy sector is able to provide sufficient, reliable and affordable energy for all Rwandans
Outcome	The generation and distribution of electricity from renewable resources is increased by the participation of the private sector supported by the intervention.
Outputs	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
Period covered by the report	July 2019-June 2020

[1] Impact refers to global objective, Outcome refers to specific objective, output refers to expected result

1.2 Budget execution

	Budget	Expenses by 06/2020	Balance	Disb. rate by 06/2020
Total	**2 000 000**	**490 248**	**1 500 099**	**25%**
BRD is able to analyze the viability of project proposals	683 000	178 617	504 383	26%
BRD is able to proactively identify a pipeline of potentially viable projects and to assist the private sector to develop them	758 800	80 015	678 785	11%
Contingency	41 800	5 188	36 612	12%
General Means	516 400	226 429	289 971	44%

1.3 Self-assessment performance

1.3.1 Relevance

	Performance
Relevance	A

The PSPE project supports the Development Bank of Rwanda (BRD) in Renewable Energy Project Analysis. BRD is responsible for the financing aspect of renewable energy project development and for developing a pipeline of potential activities and identifying potential investors.

PSPE is mainly providing capacity building services to private project developers to or via the Development Bank of Rwanda (BRD) in order to access more easily a large amount of financing for the development of renewable energy projects.

The PSPE project is in line with BRD mandate and key intervention sectors including Energy sector. Activities are permanently harmonized with the WB REF project, which has a large portion allocated to renewable energy project financing through financing institutions such as commercial banks, MFI and SACCO's, and direct lending to mini-grid developers and off-grid solar companies. The collaboration between PSPE and REF is a right mechanism to make sure synergies are maximized for the achievement of BRD's vision. In addition, the PSPE project has adopted an approach to participate in de-risking the off-grid electrification market which is in alignment with what is required for the Government of Rwanda target of universal electricity access by 2024.

1.3.2 Efficiency

	Performance
Efficiency	B

Care has been taken to ensure value for money for every penny for project activities and results. The use of financial resources is regularly checked against not only the importance of expected results, but also against other possible options in terms of opportunity costs.

With regard to the quality of outputs, taking into account the transparency in procurement for service providers and consultants/experts and recruitment of staff, quality assurance is guaranteed by efforts of both BRD and Enabel to standardize results and processes, through co-management mechanism. However, the project efficiency has been effected by COVID-19 which delayed turnkey milestones.

1.3.3 Effectiveness

	Performance
Effectiveness	B

Strategies have been put in place by the intervention management unit to ensure the achievement of project outcome in terms of quality and coverage. Strategies and activities to ensure achievement of outcome include the following:

- ✓ Engagement of concerned stakeholders in the activity plan's implementation
- ✓ Awareness campaign at provincial level involving local authorities to increase uptake loan from BRD to increase access to electricity by households
- ✓ Support the SACCOs-OSCs joint marketing through Deal Origination Agent (DOA), - discussions with SACCOs and OSCs is on-going on how the DOA will operate to increase uptake from SACCOs to households
- ✓ Direct support to mini-grid developers and off-grid solar companies in view of creating RE and SHS pipelines.

However, since the beginning of 2020 the outbreak of COVID-19 has delayed the implementation of the project will in turn delay the expected turnkey milestones such as bankable projects expected from the mini-grid feasibility studies and support to local small-scale solar companies.

1.3.4 Potential sustainability

	Performance
Potential sustainability	A

The sustainability of the project rests on the next three key factors: (1)Ownership of PSPE by BRD, (2)the long term nature of some project deliverables (bankable projects to be financed by BRD through REF, Renewable Energy project Financing analysis tools etc..) and (3)beneficiaries' involvement in all steps of the project implementation from planning to evaluation.

The PSPE is 100% embedded in BRD structure, with the BRD Executive Committee accountable for the successful implementation of the project. For this reason the CEO of the Bank gives final approval to all activities that are implemented in the project. To ensure the PSPE technical assistance will last long after the project closure a number of tools to be used in the renewable energy financing have been developed and BRD staff were involved in the development of these tools that are already being used. Not only capacity is created but also utilized and retained.

1.4 Conclusions

The development of the private sector in the renewable energy value chain is very paramount for the universal energy access, the target set by the Government of Rwanda by 2024. This makes both REF and PSPE projects relevant as embedded in the Development Bank of Rwanda and in alignment with the strategic goals of the Government of Rwanda.

During the second year of its implementation (July 2019-June 2020) the PSPE project started conducting major activities to de-risk the four windows of REF in order to accelerate off-grid electrification in Rwanda. These major activities to de-risk the REF credit line in BRD were designed to support other mitigations measures adopted by REF such as opening a new subsidy window of $15 Million to tackle the affordability issues of rural poor households.

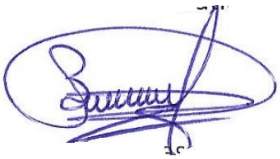
On negative notes, the outbreak of COVID-19 which resulted in a two month lockdown for the entire Rwandan territory and consequently weakened private actors in the off-grid market while at the same

time delayed the turnkey milestone for the project, has had a negative impact on the project performance which requires to be urgently addressed.

National execution official

Denis RUGAMBA

Enabel execution official



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2 RESULTS MONITORING

2.1 Evolution of the context

2.1.1 General context

A major change in the off-grid solution in Rwanda for the fiscal year from Jujy 2019 to June 2020 is the introduction of the World Bank grant for Solar Home system equivalent to $15 million under REF as its window 5. This grant has been designed as a solution to the low purchasing power of households which result in the SHS being not affordable for them.

In Rwanda, off-grid electricity access is provided mainly through small mini grid (pico-hydro or solar PV) and stand-alone solar PV systems. Mini-grids are not new in Rwanda, pico-hydro powered village grid plants are found across the country, particularly in the western province. These plants are mainly developed by local entrepreneurs. In some cases, the local administration initiates such projects, which are later managed by the community. Concerning the mini-grid subsector, the following companies are the most active:

- Hobuka LTD ;
- GESS LTD;
- Power Energy Developers;
- Great Lakes Power LTD;
- MUNYAXECO LTD;
- Mesh Power LTD;
- ERE LTD; 5 sites
- NESLECTE LTD;
- Serve and Smile LTD;
- Green Utility for Africa Group LTD

Several international companies supplying SHS have already established businesses in Rwanda. Examples include companies such as MOBISOL, IGNITE, BBOXX, NOTS, One Acre Fund, OFFGRID ELECTRIC, AZURI, etc. The companies offer different packages, including pay-as-you-go (PAYG) model. The model allows households to spread out payment for the equipment over a period of months or years to help make the systems affordable.

There are small scale local solar companies that are engaged in off-grid electrification especially the retail of solar home systems. While the Rwandan market is believed to have around 19 local companies, on the following 12 companies are relatively active:

- Glass LTD
- Innotech, Consulting Ltd
- Intertech Ltd
- Neseltec Ltd
- East Africa MG Group Ltd
- Serve and Smile ltd
- Geco
- Safer Rwanda
- Glorious Development Group
- Spotico ltd
- Dassy Enterprise
- Elerai Global Services

Energy sector DPs held an online meeting on 29th of March, 2020 to update each other on their corresponding engagements and challenges. Below are some noteworthy updates.

GoR through MINICOFIN has requested EU to reallocate 25 million euros that was previously earmarked to energy sector to complement the government measures in addressing other socio-economic issues in the context COVID-19. The fund is currently frozen on the request of GoR and is awaiting further decisions/agreements on the specifics of nature of support activities. This fund was previously planned to electrification of schools, capacity building and biomass activities.

Also, EU is providing a technical assistance in securing financing to one of the hydropower company

developing hydro generation plant with installed capacity of 1.9MW in Gorereho district. The company has already entered into PPA deal with the REG.

WB considers Rwanda as its high priority country and confirms no changes in its preparation of new electrification project (of $600+m) to be jointly financed by multiple financing agencies like AfDB, EIB, OFID, and others. WB is likely to be secure a board approval for its $150m as its contribution to this new programme in July. Similarly, AfDB is anticipating the approval of its finances by September, 2020.

Additionally, WB has restructured the REF project which allocates US$ 15 million for a nationwide Results-Based Financing (RBF) scheme in off-grid sector. Also, an additional $15m to the RBF is planned to be embedded in the new upcoming electrification project.

MININFRA has reiterated the call by the Government of Rwanda to Private Sector to get involved in the acceleration of access to electricity trough provision of solar home systems. Transmission and distribution of energy has been given a lion share of equivalent to 71% of the total energy budget for the fiscal year 2020/2021 (Rwf 122 Billion). The budget for transmission has continued to take a larger share due to the government of Rwanda prioritization of network improvement and expansion which improves power supply and reliability since they will enable power evacuation, expand grid electricity access and distribution.

The government of Rwanda has announced the intention to conduct the three following studies:

- Development of LPG master Plan to guide penetration of LPG usage
- Conduct assessment of the impact of tax and fiscal incentives on the energy sector
- Institutional reform and performance review of energy sector reforms

With regard to electricity generation, generated capacity has increase from 224.6 MW in June 2019 to 226.74 MW in May against the planned 305MW by June 2020. The meagre performance in generation is attributed to delays of the planned completion and commission of 80MW Hakan Peat Power Plan and Rukarara V Mushishito 3 MW whose completion and commissioning was affected by COVID-19 Pandemic according to MININFRA joint Sector Review Report.

With regards to the access to electricity 118,071 households were connected to the grid against the planned target of 83,000 households bringing the total households connected to the grid to 1,116,237 (41%) from the (38%) connected end June 2019. During the same period 48,730 households were connected to electricity through off grid solutions against 68,980 initially planned. The total number connected to the grid by June 2020 stand at 406,926 (15%) households. By June 2020 the total number of household with access to electricity both off and on grid connections stand at 1,523,620 (56%)

2.1.2 Institutional context

BRD, the Development Bank of Rwanda is a Public Company Limited by Shares, for more than five decades it has been the sole provider of long-term finance and has significantly facilitated the emergence of different productive enterprises in the private sector.

BRD has been entrusted by the Government of Rwanda the mandate to provide long term-finance and facilitate the emergence of different productive enterprises in the private sector. The BRD's priority sectors are energy, exports, education, agriculture and housing.

BRD has been managing World Bank financed US$ 48.94 million REF project with the objective to increase electricity access in Rwanda through off-grid technologies and facilitate private-sector

participation in renewable off-grid electrification. It aims to finance for 445,000 off-grid connections which is expected to benefit around 1.8 million Rwandans and Small and Micro-Enterprises (SMEs). The project works under four windows: a. Window 1 – On-lending through Saving and Credit Cooperative Societies (SACCOs) to households and micro-enterprises; b. Window 2 – On-lending through banks (commercial and microfinance) to households and small and medium enterprises (SMEs); c. Window 3 – Direct financing of mini-grid developers; and d. Window 4 – Direct financing of locally registered Off-grid Solar Companies (OSCs) supporting Tier 1 or higher solar systems.

In March 2018, the Government of Rwanda and the Kingdom of Belgium signed a specific agreement establishing the project on Private Sector Participation in the Generation and Distribution of Electricity from Renewable Sources-PSPE. The purpose of PSPE project is to increase electricity from renewable sources by the participation of private sector through capacity building and technical assistance. The PSPE is jointly implemented by BRD and the Belgium development Agency-Enabel.

BRD and the Swedish International Development Cooperation Agency (SIDA) have signed two Energy Portfolio Guarantee agreements relating to BRD lending (direct and on-lending) to the energy sector. The on-lending guarantee facility worth US$ 5 million will be channeled through financial institutions to facilitate increased access to finance for SMEs to support the development of affordable and clean energy in Rwanda. It is also expected to provide solutions to the constraints that the low access to electricity has on economic and social development. The guarantee shall be directed towards loans to the renewable energy sector, and towards end users of renewable energy solutions, such as households and micro-businesses.

As part of the implementation of REF and other energy projects, BRD has recently accelerated its partnership with key stakeholders in the energy sectors. It is in this context that to tackle the problem of lack of bankable projects submitted to BRD for REF financing, BRD and EDCL formally agreed to work jointly on the hands-on support to developers for mini-grid feasibility studies.

2.1.3 Management context: execution modalities

The PSPE specific agreement was signed on March 15th 2018 for a period of 4 years. PSPE is implemented jointly by BRD and the Belgian Development Agency – ENABEL. The start-up period of the project of 6 months focused mainly on the project planning and developing the baseline against which the project will be evaluated. The end of the start-up period was marked by the approval of the project implementation manual and the baseline reports which together make the start-up report.

The PSPE is implemented in co-management modality by a Steering Committee chaired by the Permanent Secretary of MININFRA and co-chaired by the Resident Representative of Enabel. The day-to-day project management is the responsibility of a Project Management Unit (PMU) composed of a representative of BRD (REF project manager) and a representative of Enabel (PSPE intervention manager).

Given that PSPE project mainly supports the implementation of the REF, successful implementation of each project depends on the joint collaboration of team members of these two projects.

2.1.4 Harmo context

The purpose of PSPE is to support the Rural Electrification Strategy (RES) by facilitating private project developers to contribute to the RES objectives of increasing access to electricity in rural areas. Because the national grid does not reach most of the rural areas in Rwanda, the PSPE project focuses on sustainable energy and mainly in the off-grid area. For this to happen, project developers need to have confidence that conditions are conducive for them to invest in renewable energy technology, that they will receive a return on their investments, and that the banking system can assist them

correspondingly.

Precisely, the PSPE project focus is to:

i. Contribute to the increase of energy generation in by leveraging private sector investment.
ii. Remove barriers for private sector investment by:
- Building capacities of private sector developers in terms of both technical and business aspects of energy project;
- Providing TA support for identifying investment opportunities, increase assessment capacity for determining the viability, and develop analytical tools and selection criteria for projects, procedures, etc.
iii. Emphasis on increasing sustainability, efficiency and effectiveness of electricity access efforts, and scaling up private sector investment by providing support

The PSPE intervention was developed in harmonization and synergy with the REF project, in order to be complementary and avoid overlaps.

2.2 Performance outcome

The outcome of the PSPE is ***"The energy sector is able to provide sufficient, reliable and affordable energy for all Rwandans."***

2.2.1 Progress indicators

Outcome : *The generation and distribution of electricity from renewable sources is increased*

The PSPE steering committee held on 5th October 2018 approved the project baseline report including the result matrix. The result matrix includes indicators of outcome

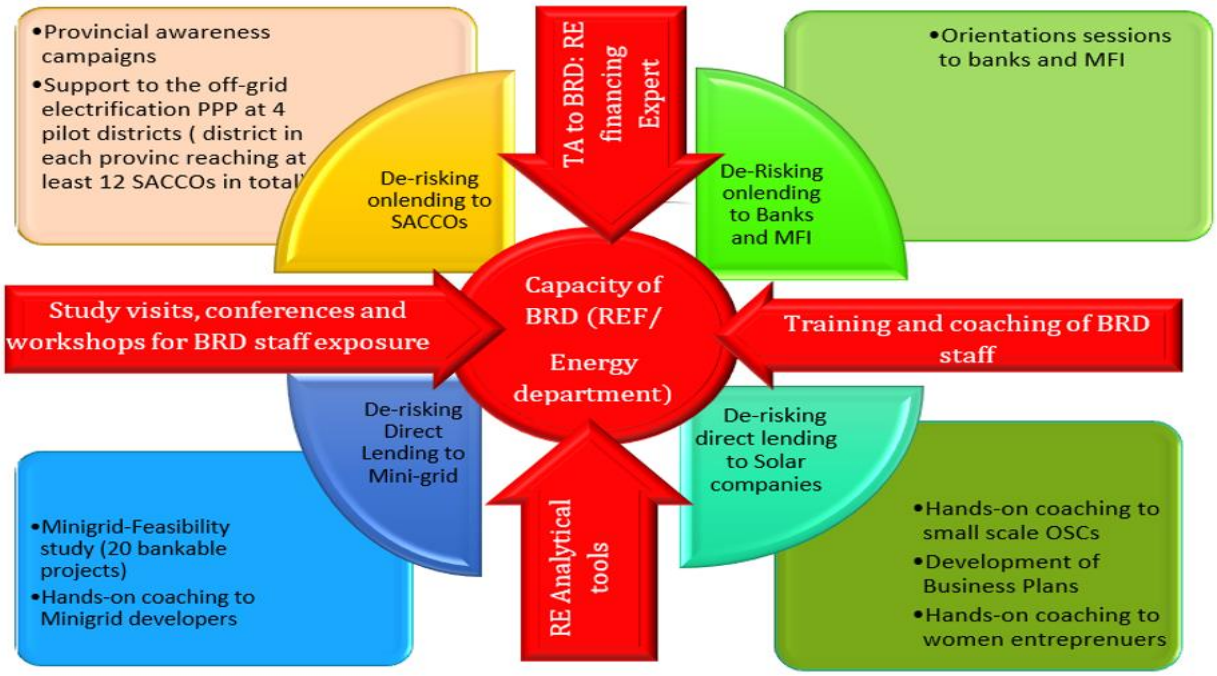
Indicators	Baseline value	Value June 2019	Target September 2019	Value June 2020	Target September 2020	End Target September 2021
Number of HH electrified through REF (Headed by M/F)	0	492	24,237	572	77,560	194,900
Number of people provided with new or improved electricity fully functional	0	2,541	98,039	2941	313,725	784,314
All four REF windows show significant disbursement (PV lanterns and PV systems: SACCOs, local banks, mini-grids)	600,000	1,227,072	2,500,000	1,425,052	8,000,000	20,000,000
Increased private sector investment in renewable energy electrification	0	Not known	750,000	0	2,400,000	6,000,000

Source: REF Project Quarterly Implementation Status Report, January 1 – June 30, 2019; 1 US$ = 905 FRW

2.2.2 *Analysis of progress made*

The PSPE project provides a technical assistance to BRD in order to build its capacity to analyse and manage renewable energy projects as part of the banks contribution to the universal electricity access target of the Government of Rwanda by the year 2024. While the PSPE's activities are limited to technical assistance, a number of its indicators are overambitious since their achievements do not directly depend on PSPE resources. For the achievement of its outcome PSPE relies on the efficiency and effectiveness of the REF implementation. While PSPE has tried to address the capacity issues that have been raised in the REF implementation, other issues related to the market itself are for beyond the PSPE mandate yet they seriously affect the performance of both PSPE and REF. The example which is frequently given is the low income level of target customers, mainly the poor households in the remote rural areas of Rwanda which make the SHS as well as other off-grid electricity solutions, less affordable to them. As the issue of affordability was identified, PSPE arranged a study visit to Nepal and Bangladesh with an objective to aware the Rwandan delegation on importance of a nationwide subsidy in Rwanda. The delegation comprised officials from MININFRA, EDCL, EPD and BRD. The team learned the right balance of subsidy and credit has created number of economic impacts in these countries. The subsidy program in these countries not only addressed the affordability constraint but also significantly contributed in private sector growth. As recommended by the visit, BRD started discussions with World Bank, MINECOFIN and MININFRA for a subsidy window under REF. World Bank has approved the subsidy window in March 2020 with an initial allocation of US$ 15 million. The subsidy is expected to benefit about 200,000 low income households gain access to affordable SHS.

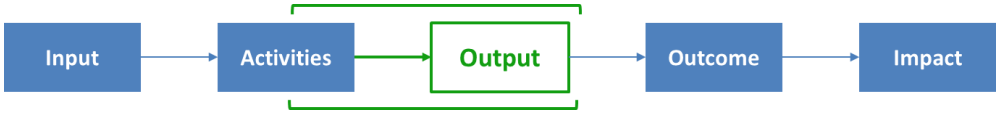
Given that, REF has been struggling in its implementation though its four window, the PSPE project structure its implementation approach around two levels (BRD capacity development and de-risking the four windows of REF) as illustrated in the figure below:



2.2.3 *Potential Impact*

According to the TFF the impact to which the PSPE project must contribute, reads as follows: "The energy sector is able to provide sufficient, reliable and affordable energy for all Rwandans". At the moment, it is still early to assess the extent to which implemented activities and achieved results contribute to this impact.

2.3 Performance output 1



2.3.1 Progress of indicators

Output 1: BRD is able to analyze the viability of project proposals

Indicators	Baseline value	Value June 2019	Target Sep 2019	Value June 2020	Target Sept 2020	End Target Sep 2021
The capacity of the renewable energy unit of BRD, expressed by the number of staff at BRD trained and able to assess renewable energy projects and by the average time for proposal analysis (delay between proposal received and feedback to the client)	No staff trained (M/F	21	5	27	10	10
	30 WD for project below 50Million	16	25	19	20	20
	60 WD for project between 50 million - 1 billion	NA	50	TBD	40	30
	90 WD for project above 1 billion	NA	80	TBD	60	45

2.3.2 Progress of main activities

Progress of main activities [2]	Progress:			
	A	B	C	D
Support the BRD in the RE project financing analysis (RE Financing Expert)		X		
Support the Implementation of REF through lending to SACCOs		X		
Support the implementation of REF through lending to MFI		X		
Support the implementation of REF through lending to Banks		X		
Support the implementation of REF through lending to off-grid solar companies (OSCs)		X		
Develop analytical tools and software for due diligence and risk assessment specific for RE projects		X		
Training of BRD staff Climate and Renewable Energy Finance		X		
Develop tools for monitoring and evaluation of RE projects (Credit Management System)		X		
Develop tools for monitoring and evaluation of RE projects (Financial Modeling)	X			
Training of BRD staff in due diligence and risks assessment specific for RE projects		X		
Training of BRD staff in Renewable Energy Project analysis and management		X		
Training REF staff in Negotiation and communication skills			X	
Provincial awareness campaign to stimulate demand for SHS and lending from REF		X		

[2] A: The activities are ahead of schedule; B: The activities are on schedule; C: The activities are delayed, corrective measures are required; D: The activities are seriously delayed (more than 6 months). Substantial corrective measures are required.

2.3.3 Analysis of progress made

I. Technical Assistance to BRD

During the second year of its implementation, the PSPE project supported the development of following tools and instruments for BRD to meet its energy sector targets:

- ✓ Energy Financing Policy and Procedural Manual for BRD to be used by BRD as whole for energy related loan appraisal
- ✓ Financial Models for 4 REF Windows to be used by BRD, SACCOs, mini-grid developers and off-grid solar companies to assess whether to finance/build the project.
- ✓ Term Sheets for three Loan Proposals under Window 4 used by BRD and its clients. The term sheets equivalent to US$ 13.73 million have been signed by the clients.
- ✓ Template of Business Plan for Off-grid Solar Companies. To be used by Off Grid Solar Companies to develop their RE business plan
- ✓ Revised REF Operations Manual. The manual is revised to consider the Window 4 lending request and it provides guidelines for REF implementation. Main users are BRD/REF, OSCs, SACCOs, MGDs, and Banks
- ✓ Lending procedure for Window 4. It helps BRD/REF to quickly analyze the loan under Window 4 thus reduces the time taken for analyzing loan.
- ✓ Operations Manual for REF Window 5 (RBF Subsidy)
- ✓ Template for Subsidy Financing Agreement. The template will be used by BRD to sign subsidy agreement with eligible off-grid solar companies.
- ✓ Guarantee Framework Operations Manual
- ✓ Solar Home System Price Model, under Window 5
- ✓ Template for Window 4 Credit Appraisal. The template provides detail outline to conduct credit appraisal for financing off-grid solar companies under REF Window 4. The template is being used by REF loan analyst.
- ✓ Model for collateral analysis in SHS financing under REF Window 1 (SACCO). The model helps to conduct collateral analysis for the SHS loans provided by SACCO. The model helps SACCO make decision on the level of collateral required for SHS financing.

Activity	Nature of PSPE Support
Finalized BBOXX Credit Appraisal Report, $3 M loan	PSPE RE Financing Expert prepared the credit appraisal report for US$ 3 million loan to BBOXX Capital Rwanda. The appraisal was conducted on the company's past performance, financial plan, product and quality, and risk to BRD on financing the company. World Bank granted no-objection due to its contribution to government's initiative in Universal Access by 2024. The report was presented to BRD's Management, Investment and Credit Committee (MICC) and Board Credit Committee. BRD has approved the loan. PSPE is now supporting REF in preparing loan agreement with BBOXX.
Prepared MICC note to release Ignite Loan	As per the loan agreement signed between Ignite and BRD, Ignite has to provide the service commission and fee on total loan amount upon signature of the agreement. However, Ignite was not able to withdraw the total loan amount due to the impact of COVID-19 on their business. Ignite requested the restructuring of their service commission and fee payment in order to manage their poor cash flow resulting from COVID-19. REF PIU requested MICC to approve the client's request. PSPE contributed to the preparation of a note to the MICC for approval.

	MICC approved the Ignite's request. The loan is in the process of disbursement.
Developed Window 5 Operations Manual	PSPE contributed to the drafting of Window 5 Operations Manual. The manual provides detail operational procedure to implement the subsidy program. It provides information on Ubudehe-wise subsidy amount, disbursement schedule, eligibility criteria for OSCs, eligibility criteria for final beneficiary households, roles and responsibility of stakeholders (EDCL, BRD, World Bank, OSCs and MININFRA). The manual provides templates of subsidy application form and subsidy financing agreement.
Developed Guarantee Framework Operations Manual	The REF Window 1 is not moving as expected. The main reason behind slow progress is because SACCOs ask physical collateral from its member for SHS loan. However, the members are hesitant to pledge their house and land as collateral for small amount of SHS loan. Further, the collateral may already have been pledged for existing loans. Also, the OSC offers loan without such collateral and it is hassle free. Therefore, the SACCOs have not been able to provide loan to its members. The PSPE RE Financing Expert prepared an operational manual for guarantee framework which provides procedures to implement different collateral instruments such as Sida Guarantee, cash security and SHS equipment as collateral on the loan provided by SACCO to its members. PSPE also developed a tool for SACCO collateral analysis which helps SACCO make decision about financing without the need for physical collateral. PSPE will support REF and SACCO to implement the guarantee framework.
Assessment on availability and importance of low-cost SHS product in Rwanda	The REF is facing from number of challenges. Affordability is seen as one of the major obstacles in realizing REF indicators. According to a study conducted by EnDev, 78.90% of the off-grid beneficiary households responded that the monthly payment of their SHS loan is higher than the amount they used to spend on traditional energy sources. According to the report, 60% of the total SHS installed in 2018 were SunKing Home 60, SunKing Home 120 and solar lanterns, all are low-cost products. These products are no longer available in the market because they do not comply with the new ministerial guideline. Therefore, now no SHS products, that is affordable to the households, are available in the market. The assessment highlights the importance of such low-cost products in Rwandan market and recommends government (MININFRA, REG) to facilitate the solar companies to bring such low-cost products. According to the assessment, the low-cost products are extremely necessary in Rwanda otherwise the REF subsidy along does not address the affordability challenges of most of the off-grid households.
REF Operations Manual	PSPE supported REF to revise REF Operations Manual. The revised manual now provides more flexibility to REF especially longer loan tenor (15 years) to mini-grid developers and finance OSCs in different business models.

II. The provincial awareness campaign

The general objective of the awareness campaign that started in the Northern and Western province is to build awareness on off-grid renewable energy through interactions between Government officials and the private sectors. During the event, off-grid solar companies have given opportunities to demonstrate their solar products. The awareness campaign was spearheaded by governors of provinces who recommended that the access to electricity by household be included in the local

government performance contract, and increased partnership between BRD and local authorities to speed up electrification of rural household through lending from the Renewable Energy Funds.
In the Eastern province in particular focal points for REF implementation have been appointed by the Governor as follows:

- Provincial level: Executive Secretary of the province
- District level: Vice Mayor in charge of Economic Affairs
- Sector Level : Executive Secretary of the Sector

III. Training in Financial Modelling for BRD staff

BRD staff working on energy projects both on-grid and off-grid have expressed the needs to close some capacity gaps related to renewable energy financial modelling. For this reason, PSPE has hired a financial modelling expert who developed excel based economic and financial models for renewable energy for all REF windows. This expert provided a deep-drive training to BRD staff on financial modelling. Most of BRD staff in charge of credit and investment analysis for REF project are able to design financial forecasting, sensitivity analysis, profitability projection, technology price, and monthly tariff by using financial models. It is expected that in the long run this will help to reduce the number of days that are taken by BRD staff to analyze loan applications.

IV. BRD staff PMP training

BRD is implementing a big number projects in various sectors mainly Energy, Agriculture, Housing, Education and Export. Recently BRD created the Single Project Implementation Unit in charge of support and controlling project implementation. The REF project team is composed of young and dynamic staff who are keen on learning new skills and knowledge. PSPE. Since the beginning of June 2020, PSPE is supporting the training of BRD staff in project management professional (PMP). It is expected that this training will help REF team to acquired skills and knowledge it takes to effectively manage a project. In total 10 BRD staff are enrolled on a PMP training provided by the college of Business and Economics of the University of Rwanda.

VI. BRD Rooftop Feasibility Study

The electricity from grid is expensive in Rwanda. The solar-based generation can be the cheapest source for businesses who run during daytime. Therefore, PSPE supported BRD to conduct a feasibility study for BRD rooftop solar project. The consultant has submitted first draft of the report which was reviewed (in accordance to the Terms of Reference) and comments were made to the consultant. At the moment the final report is available waiting the approval of BRD management.

2.4 Performance output 2

2.4.1 Progress of indicators

Output 2: BRD is able to proactively identify a pipeline of potentially viable projects and to assist the private sector to develop them.

Indicators	Baseline value	Value June 2019	Target September 2019	Value June 20	Target September 2019	End Target September 2021
The size of the energy portfolio of BRD, indicated by the number of mini-grid project proposals that are approved by BRD	0	0	3	1	9	22

The no. and value of agreements signed between BRD and SACCOs	24	44/ $1,227,072	44 agreements /1,100,000$	42agreements /1,425,052 $	74 agreements /1,850,000$	111 agreements /2,701,525$
The no. and value of agreements signed between BRD and MFI & Banks	0	4 /0$	2 agreements /2,450,980$	5agreements /500,000 $	4 Agreements /7,843,137$	8 agreements /15,686,275 $
The no. and value of agreements with private companies for the realization of renewable energy projects	0	0	2 agreements /130,719	1 agreement /3,000,000 $	7 agreements /418,301	17 agreements /1,045,752$
The no. of events campaigns organized and male/female participants at these events. Disaggregated in males and females	0	4 events/368 participants(311M /57F)	2 events / 100 participants (50/50)	7 events / 421 participants (356/65)	4events / 400 participants (200/200)	6 events / 600 participants (300/300)
The no. of companies reached for training and support	0	39	11	57	36	90

2.4.2 Progress of main activities

Progress of main activities [3]	Progress			
	A	B	C	D
Provide hands-on coaching to local small scale solar companies (strategic positioning, development of bankable Business Plans, advisory services, training)		X		
Support promotion of productive use of RE by men and women entrepreneurs		X		
Conduct feasibility study and develop bankable projects to be financed by REF			X	
Organize the workshop on RE de-risking			X	
Organize study visit for technology transfer and business matchmaking in India (with focus on productive use of solar energy)	X			
Matchmaking between local and international companies to facilitate import of affordable product in the Rwandan market		X		
Support SACCOs and OSC joint marketing through Deal Origination Agents		X		

2.4.3 Analysis of progress made

I. Support to small scale solar companies

On 16 September 2019, PSPE organized a half-day workshop on Capacity Need Assessment of Small-scale Solar Companies in the Perspective of Private Sector Development. The main objective of the workshop was to discuss with solar companies key capacity gaps they are facing in off-grid sector investment. Total eight companies actively participated the workshop and openly shared their current capacity gap. On 20 September 2019, PSPE also discussed with other four companies in order to validate the capacity gap identified from the workshop.

The key gaps identified during consultation with the solar companies were: a. difficult in accessing REF

[3] A: The activities are ahead of schedule; B: The activities are on schedule; C: The activities are delayed, corrective measures are required; D: The activities are seriously delayed (more than 6 months). Substantial corrective measures are required.

facility; b. no tangible collateral; c. high interest rate on the fund from commercial banks; d. limited off-grid project implementation capacity of solar companies; and e. limited knowledge in preparing loan documents such as business plan.

For this reason PSPE recruited a consultant to support small-scale solar companies for their possible participation in REF facility. Once the capacity is strengthened, it is expected that the companies would be able to provide off-grid service in Rwandan market for longer future. The consultant has produced an organizational assessment report for Solar companies and a strategic positioning report which highlight following recommendation to strengthen the capacity of small scale local solar companies.

- Identify potential suppliers of SHS who can provide the much needed affordable products to serve the interests of Companies, SACCOs and the households thus closing the existing gap
- Facilitate the potential supplier with information of the type of affordability gap on the supply side of the solar home systems to off-grid market. Those available are not affordable.
- Identify companies which are ready to sign up a service level agreement with the supplier and receive the needed products for the off-grid market.
- Identify suppliers' of PAYGO software at an affordable price. This will be done by inviting local solar companies to attend a demo and negotiation meeting.
- Create synergies among off-grid solar companies and identify strategic partners.
- Identify companies interested in a service level agreement with SACCOs and facilitate their agents to join the Deal Origination Agent training to penetrate rural off-grid households market.
- Identify fast movers in OSCs who can develop business plans first and submit them to REF for consideration.
- Encourage OSC owners to expand shareholding by either merging with other technologically viable companies in renewable energy or sale shares to other individuals who have specific expertise, skill or financial capacity to move the company further.
- Encourage OSCs to diversify their business operations to add related products like, water heaters, electronics, air conditioners, to mention but a few to meet working capital requirements.
- Invite OSCs to apply for REF eligibility by providing the basic documents to qualify them for window 1-working with SACCOs
- Invite OSCs without MOUs with EDCL to sign up one to pre-qualify them for REF.
- Prepare a bankable business plan and apply for REF from BRD to be liquid, buy stock, and serve the market promptly. .
- Potentially increase the number of market players to bring new capacity, substantial resources with the aim to gain new market share.
- Adapt PAYGO software to create opportunity for receivable base which can be used as a collateral for a bank loan

II. Advisory support to women entrepreneurs in Renewable Energy

In alignment with the provision of TFF, the project has started supporting women entrepreneurs operating in energy sector particularly in the off-grid sub-sector to support them to address a number of challenges. The PSPE support to women aims at mainly enhancing the bargaining power in the renewable energy market by providing advisory services, coaching, training and the development of clear business plans that are unconditional tool to have access for available source of funding such as Renewable Energy Fund (REF) and Renewable Energy Performance Platform (REPP). Using the pool of experts in renewable energy available at BRD, PSPE has supported the two women led companies to develop a joint business plans that was submitted to REPP for financing. As part of de-risking activities, PSPE accompanies consortium POWA Women in its discussion with REPP. In fact after the submission of the Business Plan, POWA Women was among 12 companies around the World and the

only company in Rwanda, that have been selected by REPP. PSPE is providing support to POWA women in the subsequent negotiation with REPP.

III. Support REF in the analysis of loans request analysis

After the opening of windows 4 of REF, which is direct lending to solar companies, REF has received loans applications from major solar companies operating in Rwanda. Through the services of the Renewable Energy Financing Expert PSPE has supported REF to analyze loans applications to ensure due diligence and risk mitigation. The support of PSPE focused mainly on the Ignite loan equivalent to $3 Million to finance 30,000 solar home systems, the Solar Nots loan equivalent to $3.7 million to finance 100.000 solar home systems, Nots SPV loan request for $5 million to finance 120,000 solar home systems and the BBOXX loan request for $ 3 million to finance 20,800 solar home systems. While these loans request are at different stages, it is expected that during the first quarter of 2020 some will reach the financial closure and disbursement stages.

IV. Hands-on coaching support to developers for mini-grid feasibility studies

Since the beginning of its implementation the Renewable Energy Funds, which is a credit line funded by the WB and implemented by BRD, has received very few mini-grid proposals for funding and this is mainly due to the lack of capacity from mini-grid developers to conduct sound detailed feasibility studies. To overcome this capacity gap in the feasibility study, a renewable energy de-risking approach is being implemented by PSPE, not only to tackle the capacity of developers, but also the capacity of local design offices as well as the issue of sunk cost. In addition to strengthen the capacity of developers and local consultants, the approach includes the development of at least 20 bankable projects. It is in this framework that, in collaboration with the Energy Private Developers, BRD and EDCL, PSPE project is supporting 10 following developers in addition to one sites of the GoR:

1. Hobuka LTD ; 5 sites
2. GESS LTD; 5 sites
3. Power Energy Developers; 5 sites
4. Great Lakes Power LTD; 5 sites
5. MUNYAXECO LTD; 5 sites
6. Mesh Power LTD; 5 sites
7. ERE LTD; 5 sites
8. NESLECTE LTD; 5 sites
9. Serve and Smile LTD; 4 sites
10. Green Utility for Africa Group; 5 sites
11. GoR; 1 site of IWAWA

It is expected that from these 50 sites, at least 20 sites will turn viable and the respective 20 bankable projects will be submitted to REF for financing. The joint venture composed of Trama TecnoAmbiental, SL(TTA) and Africa Energy Services Group (AESG) started the assignment in February and has completed the inception report, and embarked on the pre-feasibility study and the development of the training manual, the initial plan to complete the assignment and avail 20 bankable projects proposal by 15th November is likely to be revised due to COVID-19 that may prevent the start of some activities that necessitate field visits.

2.5 Transversal Themes

2.5.1 Gender

According to you and your implementing partner what are the main gender gaps in the areas / outcomes covered by your intervention? Few females entrepreneurs in the energy sectors.

How does your interventions take gender into account?

- Does your project have a gender component? ***YES. We support POWA Women LTD, a consortium of women headed companies to develop Business plans and their application to REPP was selected now under further assessment.***

- Do you work with gender-sensitive indicators and do you collect sex-disaggregated data's? ***YES***

Some indicators related to people disaggregated into males and females

- Is your implementing partner pursuing any specific Gender policy, gender strategy, gender action plan? YES . specific gender activities are implemented as part of project action plan. Y

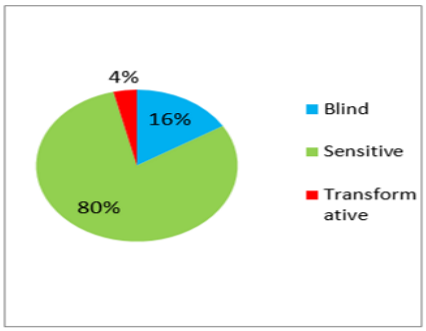
- Are your beneficiaries sensitized about gender discrimination? YES

Has your intervention been through a Gender budget scan or through any other method to mainstream gender?

During the baseline exercise, the Enabel tool 'Gender Budget Scan' has been applied in an adapted version to assess gender sensitivity of the project budget in terms of how the budget lines have been thought taking into account the gender parameters. Most of the budget lines were gender sensitive. Below is the summary.

				Management Mode		Gender Budget Scan
A			The generation and distribution of electricity from renewable resources is increased by the participation of the private sector		1,293,800	
A	01		*BRD is able to analyze the viability of renewable energy project proposals*		*840,000*	
A	01	01	Technical assistance through an expert in renewable energy financing	co-management	540,000	Sensitive
A	01	02	Development of tools for analyzing renewable energy investments	co-management	200,000	Sensitive
A	01	03	Specific training on analyzing renewable energy investments	co-management	100,000	Sensitive
A	02		*BRD is able to proactively identify a pipeline of potentially viable projects*		*190,000*	
A	02	01	Reach out to financial institutions and private companies	co-management	100,000	Sensitive
A	02	02	Linking up with the various stakeholders	co-management	90,000	Sensitive
A	03		*BRD is able to assist the private sector to develop viable project proposals*		*263,800*	
A	03	01	Capacity building among local companies to develop bankable business plans	co-management	188,800	Sensitive
A	03	02	Match making between local companies and international parties interested in renewable energy electrification and in promoting Women's entrepreneurship in the sector in Rwanda	co-management	75,000	Transformative
X			Contingencies		221,800	
X	01		*Contingencies*		*221,800*	
X	01	01	Contingencies co-management	co-management	180,000	Blind
X	01	02	Contingencies direct management	BTC management	41,800	Blind
Z			General Means		484,400	
Z	01		*Salaries*		*270,900*	
Z	01	01	BTC Project manager	BTC management	108,000	Sensitive
Z	01	02	Energy sector shared staff	BTC management	51,300	Sensitive
Z	01	03	Support staff	co-management	111,600	Sensitive
Z	02		*Investments*		*10,000*	
Z	01	02	ICT and office equipment	BTC management	10,000	Blind
Z	03		*Running Costs*		*73,500*	
Z	03	01	Communication costs	co-management	10,800	Blind
Z	03	02	Office materials and other functioning costs	co-management	12,000	Blind
Z	03	03	Field Missions	co-management	6,000	Blind
Z	03	04	External Communication costs	co-management	7,500	Blind
Z	03	05	Training	co-management	36,000	Blind
Z	03	06	Financial costs	BTC management	600	Blind
Z	03	07	Financial costs	co-management	600	Blind
Z	04		*Audit, Monitoring and Evaluation*		*130,000*	
Z	04	01	Baseline, monitoring and evaluation	BTC management	80,000	Sensitive
Z	04	02	Audits	BTC management	20,000	Blind
Z	04	03	Backstopping	BTC management	20,000	Sensitive
Z	04	04	Knowlegde management	BTC management	10,000	Sensitive
TOTAL					2,000,000	
				BTC management	341,700	
				co-management	1,658,300	

Blind	325,300
Sensitive	1,599,700
Transformative	75,000
Total	2,000,000



If no, do you consider your intervention as 'gender blind'[4]? No

- If yes, what where the main gender transformative actions[5] of your project? ***support POWA Women LTD, a consortium of women headed companies to develop Business plans and their application to REPP was selected now under further assessment.***

- *What where the main gender sensitive actions[6] of your project*

✓ Procurement of the hands-on coach to support the local small scale solar activities

✓ Mini-grid feasibility studies

- *Do you liaise with or support a gender body[7] in Rwanda?* No

Did your intervention organized any awareness activity for the staff, implementing partner?

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[4] Gender blind activities do not do not take differences between women and men into account, nor do they address gender relations. This does not imply that they are 'gender neutral' after conducting.

[5] A gender transformative action has an impact or transform the gender roles and the division of labour in a social group. If focuses on changes and often take into account empowerment processes.

[6] A gender sensitive action is taking into account the differences between women and men but do not envisage changes in gender roles/division of labour.

[7] The gender body is made of official institutions promoting gender equality in the country (GMO, MIGEPROF, National Women Council, etc.)

(Workshops, trainings, etc.) Yes POWA women
Do you collaborate, are you in contact with a gender-friendly actor in Rwanda? No
What are your challenges to take gender into consideration in your intervention?

The private sector Participation in energy is still low and this applies to both males and females with too low share of females entrepreneurs in the energy sector.
What are your proposal to address those challenges?

Because one of the root cause of the low share of females entrepreneurs is thought to be technical capacity gap, the PSPE is considering to ensure females are part of all the capacity building activities that will be organized and or financed by PSPE.

2.6 Risk management

Risks	Period of identification	Risk category	Probability	Potential Impact	Risk level	Mitigation measures	Resp.	Deadline	Progress	Status
REG does not share short, medium, and long-term grid extension plans with private project developers	Implementation	Dev	Low	Medium	Medium	Formalize collaboration in data sharing between REG and BRD	PSPE and REF Manager	Continuous until end of the project	REF and PSPE have started interactions with REG to increase data sharing between REG and BRD. EDCL has shared with PSPE a list of 1827 off-grid sites as in the approved NEP	Open
Low income of rural households leads to a small market for renewable energy equipment or services	Implementation	Dev	Medium	High	High	Collaboration with other initiatives for subsidies to improve business case	REF Manager	31/10/2020	Window 5 on a subsidy amount equivalent to $15M under REF approved by both the Government of Rwanda and WB.	Open
Absence of viable commercial and business activities in non-grid areas leads to small market for renewable energy equipment or services	Implementation	Dev	Medium	Medium	Medium	PSPE to provide hands on support the feasibility studies of priority sites	PSPE Manager	30/11/2020	The Consultant who is conducting DFS has completed inception report and training manual	Open
						PSPE supports local Small scale solar companies in developing business plans and building the bargaining power.	PSPE Manager	30/04/2020		
Lack of interest from private firms to take credit from local banks at high interest rates	Formulation	Dev	Low	High	Medium	Awareness raising • Providing competitive rates and loans in local currency	TA Financing	31/05/20	So far four OSCs have submitted to BRD a request for loans equivalent to $ 13.53M (USD 4.8 M for ignite, USD 3.73 Nots Solar GoR contracts and USD 5M for Notsolar Special projects business). And BBOX $3M. At the Moment the USD 4.8 M for ignite has been approved by the BRD credit committee after the no objection from the WB	Open

Risks	Period of identification	Risk category	Probability	Potential Impact	Risk level	Mitigation measures	Resp.	Deadline	Progress	Status
Capacity building of BRD staff not effective and skills transfer does not take place	Implementation	OPS	low	Medium	Medium	Conduct Capacity Needs Assessment before training	PSPE Manager	31/05/20	Ongoing	Open
Priority shift on on-grid solutions	Formulation	Dev	Low	High	Medium	Watch the likelihood of the risk if it increases, develops the contextual solutions.	PSPE Manager	Continuous	Same magnitude	Open
Continued subsidies for on-grid electrification, and for electricity supply make off-grid solutions unavailable or undesirable	Formulation	Dev	high	High	Medium	Put prominently on the agenda of ESWG	PSPE Manager	Continuous	Ongoing	Open
Policy and structural reforms affecting the intervention negatively	Formulation	Dev	Low	High	Medium	Take part to policy discussion during ESWG	REF Manager	Continuous	SPE and REF are regularly invited to the energy technical and sector working groups	Open
Uncertainty regarding the transfer of assets and compensation to mini-grid IPPs when the grid arrives	Formulation	Dev	Low	High	Medium	Engage RURA to clarify and enact guidelines to regulate the process of transition from off-grid (mini-grid) to on-grid operation.	REF Manager	Continuous	Ongoing	Open
Delay in project implementation both REF and PSPE due to delayed recruitment, weak planning, weak coordination amongst the key stakeholders (Enabel, WB, BRD)	Implementation	OPS	Medium	Medium	Medium	Joint period review of the implementation of action plan of PSPE and REF	PSPE Officer	Continuous	Ongoing	Open

3 STEERING AND LEARNING

3.1 Strategic re-orientations

1. Support small scale solar companies in the development of business plan and strategic positioning

After the unfreezing of window 4 of REF which is about direct lending to Solar Companies, locally based international companies have joined the implementation of REF. They submitted they loan applications and some have already signed a loan agreement with BRD while other loans applications have been approved by both BRD and World Bank.

However, a vibrant market in which both international and locally owned companies are present in the supply chain is highly required to ensure sustainability of the off-grid subsector in Rwanda. For this reason, a consultation meeting with small scale solar companies that was organized on 19th September 2019 identified following gaps among those companies: *" a. difficult in accessing REF facility; b. no tangible collateral; c. high interest rate on the fund from commercial banks; d. limited off-grid project implementation capacity of solar companies; and e. limited knowledge in preparing loan documents such as business plan".* It was agreed with the companies that PSPE support will mainly focus on technical assistance through a local consultant having expertise in private sector development". The consultant who started his one year assignment in April 2020, is working closely with companies, conduct required activities and support to build their partnership with REF project and mainly develop bankable business plans to be financed by REF.

2. Support SACCOs and solar companies joint marketing through the use of Deal Origination Agent

The PSPE implementation approach consists of inward looking activities aiming to strengthen the capacity of BRD in the analysis of renewable energy projects and outward looking activities aiming at de-risking the four windows of REF. it has been realized that SACCOs are facing a challenges of lack of pipeline resulting in Low uptake from the Rwf 1.5 Billion under REF window 1: on-lending to households through SACCOs less than 6% disbursed. The use of Deal Origination Agents in the first window would help to Increase the utilization of the loans that REF gives to SACCOs and Microfinance Institutions and accelerate the electricity access by poor rural households through participation of Solar companies. The expected result of this Deal Origination Agents stand as follows:

- The initiative helps SACCO increase lending exposure in SHS;
- It increases the SHS sales for solar companies
- Reduces credit risk of Solar Companies because sales through SACCO/Microfinance Institutions is based on cash
- Increase in job creation as DOAs get local employment opportunity;
- Increase number of SHS connection thus it helps to achieve government target

3. Support the initiation of strong partnership between international companies manufacturing SHS and local solar companies to increase competition in the market and availability of affordable SHS products.

After the publication of the ministerial guidelines of SHS in the middle of 2019, the cheapest SHS kits that were present in the market became ineligible for the Rwandan market. At the moment in the Rwandan market, end users of solar home system mainly rural households complain that the available solar home systems are not affordable to them. At the same time, a simple search of companies manufacturing solar home system reveals the possibility to find cheaper kits that meet the Rwandan

standards. The PSPE project will continue to initiate and support a win-win partnership between international companies manufacturing or importing the solar home system in order to increase the participation of both large scale and small scale solar companies in the off-grid Rwandan market.

4. Continue the organizational capacity building of BRD by supporting the development and integration of BRD credit management system (CMS)

The REF project lacks the complete system which can support the loan management process by managing customers relationship from initial contacts to the collection of outstanding loans incorporating online loans applications, analysis and monitoring to increase efficiency & effectiveness (real-time visibility in making timely decisions & Reporting). In alignment with the Technical and Financial File, PSPE will support the development and integration of a software systems for BRD credit management systems to facilitate for Customer self-services, incorporating online loans applications, analysis and monitoring for action Renewable Energy projects and other BRD projects,

5. Support the mini-grid developers on detailed feasibility studies

The success of the PSPE implementation depends on the success implementation of REF and other energy financed by BRD. On their turns, Energy projects in BRD including REF depend on the viability of renewable energy projects formulated by developers and submitted to BRD for financing.

On the 5th October 2018, BRD and EPD organized a half-day session to assess capacity of EPD members for them to effectively access the Renewable Energy Funds managed by BRD. At the end of the session, it was clear that the most important capacity challenge that hinders the private sector participation in the generation and distribution of electricity from renewable sources is the feasibility study mainly for three reasons:

- ✓ Renewable energy companies do not have qualified own resources to conduct the detailed feasibility studies (DFS)
- ✓ Outsourcing experts to conduct feasibility studies is expensive and involves possible sunk cost when the proposed business plans are not financed
- ✓ Skills gap in the local design offices.

To overcome the capacity gap in the feasibility study, a more sustainable structural approach is required, not only to tackle the capacity of developers, but also the capacity of local design offices as well as the issue of sunk cost. The experience has shown that theoretical training alone leaves trainees without practical skills and knowledge.

3.2 Project implementation re-orientations

Project structure and implementation modalities

The PSPE project implementation as designed during the formulation has not changed. The PSPE Steering Committee is the highest level of decision in the intervention. It is in charge of the strategic steering of the intervention. The main responsibilities of the PSPE SC are:

- ✓ Putting in place and supervise the management structures of the intervention;
- ✓ Defining the intervention strategy and ensuring its alignment on the overall Rwandan strategy (strategic planning, annual planning and budgeting),
- ✓ Assessing the intervention's progress in attaining the development results (strategic quality assurance and control) and assuring sustainability
- ✓ Reviewing and approving the intervention plans and reports (annual results report; mid-term

review and final evaluation reports).

- ✓ Managing strategic changes, intermediate results changes, changes on implementation modalities as well as the adaptation of the intervention organization and budget;
- ✓ Modifying the content of TFF when necessary (except the General and Specific objectives) and take any strategic decision required to ensure the success of the intervention.
- ✓ Solving problems that cannot be solved at the operational level,
- ✓ Enhancing harmonization among donors
- ✓ Ensuring the appropriate handover during the closure of the intervention and approving the final report.

PSPE steering committee is chaired by the Permanent Secretary of MININFRA. Other members are:

- ✓ Resident representative of Enabel (co-chair)
- ✓ A representative of BRD (member)
- ✓ A representative of MINECOFIN (member)

At technical level, the ToR of the Renewable Energy Financing Expert have been adjusted to incorporate targets sets in the baseline. After discussions with BRD procurement office and Enabel, the PSPE management proposed a cost plus incentive contract. This is a type of win-win service contract for very complex assignment which provides, in addition to a time-based fees, a consultant is entitled to, an incentive payment upon achievement of the client target for which the consultants cannot have control but can highly contribute to. After six months of implementation of this contract we have learned that it suits the nature of the assignment and we have observed considerable efforts by the consultants to support the achievement of PSPE targets.

3.3 Recommendations

Recommendations	Actor	Deadline
1. Support the initiation of strong partnership between international companies manufacturing solar home systems and local solar companies to increase competition in the market and availability of affordable SHS products.	PSPE and EPD	January 2021
2. Maintain the support to local scale solar companies in the development of business plan.	REF and PSPE Manager	Continuous
3. Support the SACCOs and OSCs joint marketing through the use of Deal Origination Agents as part of re-energising of SHS market and increase uptake from households.	REF and PSPE Manager	October 2021
4. Launch tender on BRD CMS integration in order to cater for possible delay in the procurement process which would affect the project duration	BRD Procurement office and IT	October 2020
5. Collaborate with local authorities in the SHS awareness campaign	BRD and PSPE	March 2021

3.4 Lessons Learned

Lessons learned	Target audience
1) Growth of the Rwandan SHS market requires involvement other players in supply chain (local small scale solar companies as retailer) instead of leaving the manufacturing, whole sale, importation and retail to the international companies.	BRD, EPD, REG
2) Institutional strengthening of locally manged solar companies is required to increase the competition and market fairness	EPD
3) Mini-grid projects need subsidy for their profitability and bankability	BRD, REG, MININFRA, DPs
4) Whenever, possible clear communication with key off-grid market actors such as Solar Companies is paramount for common understanding of REF requirements. Thus, uploading documents that are intended to the public improves transparency and competitiveness in the market.	BRD
5) In a risky market such as the Rwandan off-grid market, physical collateral traditionally required by banks push away companies from requesting loan and more modern collateral such as receivables, credit guarantee, insurance guarantee can de-risk the market as their motivate both bankers and sellers of SHS who want loans.	BRD, SACCOs, MFI, commercial banks
6) Project indicators should be crafted taking into account resources available to achieve them as well as the wider context of project implementation. Ignoring this reality might result in project team's frustration and possible project failure, unless an agile approach is in place to adjust those indicators whenever required.	MINECOFIN, ENABEL, BRD

4 ANNEXES

4.1 Quality criteria

1. RELEVANCE: The degree to which the intervention is in line with local and national policies and priorities as well as with the expectations of the beneficiaries					
In order to calculate the total score for this quality criterion, proceed as follows: 'At least one 'A', no 'C' or 'D' = A; Two times 'B' = B; At least one 'C', no 'D'= C; at least one 'D' = D					
Assessment : RELEVANCE: total score		A	B	C	D
		X			
1.1 What is the present level of relevance of the intervention?					
X	A	Clearly still embedded in national policies and Belgian strategy, responds to aid effectiveness commitments, highly relevant to needs of target group.			
	B	Still fits well in national policies and Belgian strategy (without always being explicit), reasonably compatible with aid effectiveness commitments, relevant to target group's needs.			
	C	Some issues regarding consistency with national policies and Belgian strategy, aid effectiveness or relevance.			
	D	Contradictions with national policies and Belgian strategy, aid efficiency commitments; relevance to needs is questionable. Major adaptations needed.			
1.2 As presently designed, is the intervention logic still holding true?					
x	A	Clear and well-structured intervention logic; feasible and consistent vertical logic of objectives; adequate indicators; Risks and Assumptions clearly identified and managed; exit strategy in place (if applicable).			
	B	Adequate intervention logic although it might need some improvements regarding hierarchy of objectives, indicators, Risk and Assumptions.			
	C	Problems with intervention logic may affect performance of intervention and capacity to monitor and evaluate progress; improvements necessary.			
	D	Intervention logic is faulty and requires major revision for the intervention to have a chance of success.			

2. EFFICIENCY OF IMPLEMENTATION TO DATE: Degree to which the resources of the intervention (funds, expertise, time, etc.) have been converted into results in an economical way					
In order to calculate the total score for this quality criterion, proceed as follows: 'At least two 'A', no 'C' or 'D' = A; Two times 'B', no 'C' or 'D' = B; at least one 'C', no 'D'= C; at least one 'D' = D					
Assessment : EFFICIENCY : total score		A	B	C	D
		X			
2.1 How well are inputs (financial, HR, goods & equipment) managed?					
X	A	All inputs are available on time and within budget.			
	B	Most inputs are available in reasonable time and do not require substantial budget adjustments. However there is room for improvement.			
	C	Availability and usage of inputs face problems, which need to be addressed; otherwise results may be at risk.			
	D	Availability and management of inputs have serious deficiencies, which threaten the achievement of results. Substantial change is needed.			
2.2 How well is the implementation of activities managed?					

X	A	Activities implemented on schedule
	B	Most activities are on schedule. Delays exist, but do not harm the delivery of outputs
	C	Activities are delayed. Corrections are necessary to deliver without too much delay.
	D	Serious delay. Outputs will not be delivered unless major changes in planning.
2.3 How well are outputs achieved?		
	A	All outputs have been and most likely will be delivered as scheduled with good quality contributing to outcomes as planned.
X	B	Output delivery is and will most likely be according to plan, but there is room for improvement in terms of quality, coverage and timing.
	C	Some output are/will be not delivered on time or with good quality. Adjustments are necessary.
	D	Quality and delivery of outputs has and most likely will have serious deficiencies. Major adjustments are needed to ensure that at least the key outputs are delivered on time.

3. EFFECTIVENESS TO DATE: Degree to which the outcome (Specific Objective) is achieved as planned at the end of year N				
In order to calculate the total score for this quality criterion, proceed as follows: 'At least one 'A', no 'C' or 'D' = A; Two times 'B' = B; At least one 'C', no 'D'= C; at least one 'D' = D				
Assessment EFFECTIVENESS : total score	A	B	C	D
		X		
3.1 As presently implemented what is the likelihood of the outcome to be achieved?				
	A	Full achievement of the outcome is likely in terms of quality and coverage. Negative effects (if any) have been mitigated.		
X	B	Outcome will be achieved with minor limitations; negative effects (if any) have not caused much harm.		
	C	Outcome will be achieved only partially among others because of negative effects to which management was not able to fully adapt. Corrective measures have to be taken to improve ability to achieve outcome.		
	D	The intervention will not achieve its outcome unless major, fundamental measures are taken.		
3.2 Are activities and outputs adapted (when needed), in order to achieve the outcome?				
	A	The intervention is successful in adapting its strategies / activities and outputs to changing external conditions in order to achieve the outcome. Risks and assumptions are managed in a proactive manner.		
X	B	The intervention is relatively successful in adapting its strategies to changing external conditions in order to achieve its outcome. Risks management is rather passive.		
	C	The intervention has not entirely succeeded in adapting its strategies to changing external conditions in a timely or adequate manner. Risk management has been rather static. An important change in strategies is necessary in order to ensure the intervention can achieve its outcome.		
	D	The intervention has failed to respond to changing external conditions, risks were insufficiently managed. Major changes are needed to attain the outcome.		

4. POTENTIAL SUSTAINABILITY: The degree of likelihood to maintain and reproduce the benefits of an intervention in the long run (beyond the implementation period of the intervention).					
In order to calculate the total score for this quality criterion, proceed as follows: At least 3 'A's, no 'C' or 'D' = A ; Maximum two 'C's, no 'D' = B; At least three 'C's, no 'D' = C ; At least one 'D' = D					
Assessment POTENTIAL SUSTAINABILITY : total score		A	B	C	D
		X			
4.1 Financial/economic viability?					
	A	Financial/economic sustainability is potentially very good: costs for services and maintenance are covered or affordable; external factors will not change that.			
X	B	Financial/economic sustainability is likely to be good, but problems might arise namely from changing external economic factors.			
	C	Problems need to be addressed regarding financial sustainability either in terms of institutional or target groups costs or changing economic context.			
	D	Financial/economic sustainability is very questionable unless major changes are made.			
4.2 What is the level of ownership of the intervention by target groups and will it continue after the end of external support?					
X	A	The steering committee and other relevant local structures are strongly involved in all stages of implementation and are committed to continue producing and using results.			
	B	Implementation is based in a good part on the steering committee and other relevant local structures, which are also somewhat involved in decision-making. Likeliness of sustainability is good, but there is room for improvement.			
	C	The intervention uses mainly ad-hoc arrangements and the steering committee and other relevant local structures to ensure sustainability. Continued results are not guaranteed. Corrective measures are needed.			
	D	The intervention depends completely on ad-hoc structures with no prospect of sustainability. Fundamental changes are needed to enable sustainability.			
4.3 What is the level of policy support provided and the degree of interaction between intervention and policy level?					
X	A	Policy and institutions have been highly supportive of intervention and will continue to be so.			
	B	Policy and policy enforcing institutions have been generally supportive, or at least have not hindered the intervention, and are likely to continue to be so.			
	C	Intervention sustainability is limited due to lack of policy support. Corrective measures are needed.			
	D	Policies have been and likely will be in contradiction with the intervention. Fundamental changes needed to make intervention sustainable.			
4.4 How well is the intervention contributing to institutional and management capacity?					
x	A	Intervention is embedded in institutional structures and has contributed to improve the institutional and management capacity (even if this is not an explicit goal).			
	B	Intervention management is well embedded in institutional structures and has somewhat contributed to capacity building. Additional expertise might be required. Improvements in order to guarantee sustainability are possible.			
	C	Intervention relies too much on ad-hoc structures instead of institutions; capacity building has not been sufficient to fully ensure sustainability. Corrective measures are needed.			
	D	Intervention is relying on ad hoc and capacity transfer to existing institutions, which could guarantee sustainability, is unlikely unless fundamental changes are undertaken.			

4.2 Decisions taken by the Steering Committee and follow up

No	Decision	Date	Deadline	Responsible	Status of the decision	Action	Responsible	Deadline	Progress	Status
1	The project steering committee (PSC) meeting approves the PSPE project start-up plan. The start-up period covers the period from 15th March to 14th September 2018. The project management is urged to do all the necessary actions to respect deadlines set in the plan for a proper start-up, with a common understanding from key project stakeholders.	13-06-18	10-09-18	Intervention Manager	Implemented	Implement the plan	PSPE team	Sept 2018	Done	Completed
2	The PSC approves the roadmap for the baseline study. The team to conduct the baseline study is composed of the following: 1. Hector Mutijima, from BRD 2. Innocent Mitali, from BRD 3. Gratien Gasaba, from Enabel 4. Ellen Van Himbergen, from Enabel 5. Peace Kalisa , from MININFRA 6. Tom Butera from MINECOFIN	13-06-18	10-09-18	Intervention Manager	Implemented	Prepare the baseline	PSPE team	Sept 2018	Done	Completed
3	Approval of the PSPE Baseline report and PIM	05-10-18	Immediately	IMU	Implemented	File the report and monitor indicator	PSPE team	Immediately	Done	ongoing

4	The steering committee approves a budget reallocation from contingency to new budget line of €26,000	30-08-2019	Immediately	IMU	Implemented	Budget change	PSPE Accountant	immediate	Done	Completed
5	The steering committee approve budget reallocation from savings to budget lines with deficit cash flow as follows: ➢ €305,000 from budget line A0101 to budget line A0202 for detailed feasibility study ➢ €36,000 from budget line Z0303 to budget line A0103 for Specific training in Renewable Energy analysis ➢ €42,000 from budget line X0101 to budget line Z0101, for the staff salary	30-08-2019	Immediately	IMU	Implemented	Budget change	PSPE Accountant	immediate	Done	Completed
6	The PSC decided to cancel the PSPE activity on supporting the drafting of subsidy policy on Renewable Energy financing as with the approved mechanism on subsidy for SHS, the document at policy level is not required.	13-05-2020	Immediately	Intervention Management Unit (IMU)	Implemented	NA	NA	NA	NA	
7	The PSC approved € 307,000 budget to support BRD in digitization of CMS, including Phase 2 (Integrating accounting and human capital management systems for renewable energy).	13-05-2020	Immediately	IMU and BRD IT team	Ongoing	Implement the development of CMS	BRD/IT department	June 2021	Tender at evaluation n stage	Ongoing

8	The PSC approved the reallocation request of only € 112,000 from Budget Line X0101 to Budget Line A0102 to support digitization of BRD CMS. Other budget reallocations were rejected, pending sound justification.	13-05-2020	Immediately	IMU	Implemented	Budget change in UBW	PSPE Accountant	immediate	Done	Completed
9	The PSC approved PSPE request of joint SC meeting with REF project. The next PSPE SC meeting will be organized jointly with REF SC meeting.	13-05-2020	Continuous	PSPE and REF project managers	Ongoing	Organize REF/PSPE joint Steering Committee meeting	PSPE/REF managers	Continuous	The first joint meeting to be organized before Dec 2020	Not yet due

4.3 More results at a glance

Logical framework's results or indicators modified in last 12 months?	No
Baseline Report registered on PIT?	YES
Planning MTR (registration of report)	Planned in September 2020
Planning ETR (registration of report)	foreseen in 2021
Backstopping missions since 01/07/2018	None

4.4 Expenses and commitments

	Row Labels	Total Budget	Expenses June 2020	Firm Commitments	Non-Firm commitments	Total Commitments	Total expenses and Commitments	Balance to be committed
Result 1	**BRD is able to analyze the viability of renewable energy project proposals**	**683,000**	**178,617**	**334,487**	**125,000**	**459,487**	**638,104**	**44,896**
A0101	TA through an expert in RE Financing	235,000	89,505	119,595		**119,595**	**209,100**	**25,900**
A0102	Development of tools for analysing RE investments	312,000	858	181,180	125,000	**306,180**	**307,038**	**4,962**
A0103	Specific Training on analyzing Re Investment	136,000	88,254	33,712		**33,712**	**121,966**	**14,034**
Result 2	**BRD is able to proactively identify a pipeline of potentially viable projects and assist the private sector to develop them**	**758,800**	**80,015**	**413,424**	**150,000**	**533,424**	**613,438**	**145,362**
A0201	Reach out to financial institutions and private companie	190,000	156		150,000	120,000	120,156	69,844
A0202	Capacity building among local companies to develop bankable business plans	493,800	21,169	413,424		413,424	434,593	59,208
A0203	Match making between local companies and international parties interested in renewable energy electrification and in promoting Women's entrepreneurship in the sector in Rwanda	75,000	58,690			0	58,690	16,310
	Contingencies	**41,800**	**5,188**	**0**	**0**	**0**	**5,188**	**36,612**
X0101	Contingency Cogestion	26,000	0			0	0	26,000
X0102	Contingency Regie	15,800	5,188			0	5,188	10,612
	General means	**516,400**	**226,429**	**173,650**	**70,000**	**243,650**	**470,079**	**46,321**
Z01	Wages and salaries	326,900	198,250	128,650		128,650	326,900	0
Z02	Investments	10,000	7,467			0	7,467	2,533
Z03	Running Cost	49,500	12,069		25,000	25,000	37,069	12,431
Z04	Audit, monitoring,evaluation	130,000	8,643	45,000	45,000	90,000	98,643	31,357
	Grand Total	**2,000,000**	**490,249**	**921,561**	**345,000**	**1,236,561**	**1,726,810**	**273,190**