Enabel

EDCL
ENERGY DEVELOPMENT CORPORATION LIMITED

Final Report (2015-2021)

Improving access to reliable on-grid electricity services for households and priority public institutions – Belgian contribution to EARP

BE2-EARP

RWA1509411

Belgian development agency

enabel.be

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Acronyms

AfDB	African Development Bank
CDEU	Capacity Development Energy Utility
DI	Director of Intervention
DP	Development Partner
EARP	Electricity Access Roll-Out Programme
EDCL	Energy Development Corporation Limited
EDPRS	Economic Development Poverty Reduction Strategy
Enabel	The Belgian development agency
EPC	Engineering procurement construction
ESMAP	Energy Sector Management Assistance Program
ETR	End term review
EUCL	Electricity Utility Corporation Limited
EWSA	Energy Water and Sanitation Authority
GMO	Gender Monitoring Office
GOR	Government of Rwanda
HOC	Head of Cooperation
ICB	International Competitive Bidding
ICP	Indicative Cooperation Program (between Rwanda and Belgium)
ITA	International Technical Assistant
M&E	Monitoring and Evaluation
MD	Managing Director
MTF	Multi-Tier Framework
MTR	Mid-term review
PIM	Project Implementation Manual
PMU	Project Management Unit
RAF	Administrative and Financial Responsible
RAFI	International Financial and administrative Responsible
REF	Rural Electrification Strategy
TFF	Technical and Financial File
WB	World Bank

Intervention form

Intervention title	Improving access to reliable on-grid electricity services for households and priority public institutions – Belgian contribution to Electricity Access Roll-Out Programme (BE1-EARP)
Intervention code	RWA1208111
Location	Eastern Province, Rwanda
Total budget	€ 12.000.000 (BE-EARP)
Partner Institution	Ministry of Infrastructure (MININFRA) Rwanda Energy Group (REG) Electricity Development Corporation Limited (EDCL)
Start date Specific Agreement	BE2-EARP: 17 December 2015
Date intervention start /Opening steering committee	BE2-EARP: 17 December 2015
Planned end date of execution period	BE2-EARP: 16 December 2020(extended until the end of the Specific Agreement)
End date Specific Agreement	BE2-EARP: 16 December 2020
Target groups	Households, priority public institutions and businesses in rural areas of Eastern Province
Impact[1]	The energy sector is able to provide sufficient, reliable and affordable energy to all Rwandans
Outcome	The access to reliable on-grid electricity services for households and priority public institutions in rural areas is improved
Outputs BE2-EARP	Rural electricity access is increased through national electricity grid extension
	Beneficiaries (households, productive and community uses) are supported in improving their tier access level (cancelled)
	Coherence and coordination are improved between EARP and off-grid energy access initiatives and the sector
Years Covered by the Intervention	17 December 2015 to December 2020

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

Global appreciation

Describe your global appreciation of the intervention (max 200 words):
BE EARP comprises a 39 million euros grant envelop supporting Electricity Development Coorporation (EDCL), a subsidiary of Rwanda Energy Group in upgrading and expanding the electricity network in the country. Of which, B2 EARP constitutes 12 million euros of the overall BE EARP portfolio. BE2 EARP in a practical term was an extension of the BE1 EARP with the similar objective and scope and was managed by the same project as that of BE1 EARP. This component mostly contributed to extension of new power distribution lines as well the new on-grid connections. Unlike BE1 EARP, BE2 EARP was more focused into supplies of poles, cables and electric equipment and accessories to be employed across various tenders withing BE1 and BE2. The geographic focus of the BE2 was primarily on Kirehe for the new connections and Rwamagana, Kayanoza and Ngoma for the grid strengthening works. The number of electricity connections resulted from the BE2 EARP project has thus far exceeded over 28000 that included households, local businesses and social and public institutions primarily in the eastern province of Rwanda. Of which, 8000 came from the direct extension of the utility networks, while the remaining connections were a result of the fill in connections carried out by REG branches with the supplies procured from the BE EARP project. This contributes towards the GoR's target of reaching 100% electrification by the year 2024, of which 69.1% will be connected to the grid while 30.9% will be using off-grid solutions. The project faced similar design and implementation challenges in the early years of implementation like that of BE1 EARP. Almost every major works/supply contract went through addendums, either for the time extension or for further adjustment of scope, thereby consequentially pushing the completion date of the projects further. However, despite the delays in the completion of electrification lots within the initial implementation period, all the activities were completed by project specific agreement period, December 2020. Major part of the BE1 and BR2 project investments went to five districts of Eastrn province region namely, Rwamagana, Kayonza, Kirehe and Ngoma in constructing and upgrading almost 900 km of distribution networks connecting around 18000 residential and non-residential customers to the national electricity grid. These completed projects are expected to greatly contribute to the achievement of project's specific objectives and outcomes which also goes beyond the projects implementation period. and contributes to the objectives of new economic recovery plan set by Rwandan government in responding to mitigating economic impact of COVID-19 pandemic.

Score your global appreciation of the intervention 1:	**Score** your global appreciation of the intervention 2:
	Very satisfactory
National execution official	**Enabel execution official**
Reuben Reuben Ahimbisibwe Director of Inverntion, BE EARP	Bibek Raj Kandel, Intervention Co-Manager, BE EARP 31.08.2022

[1] Very satisfactory - Satisfactory - Non satisfactory, in spite of some positive elements - Non satisfactory

[2] Very satisfactory - Satisfactory - Non satisfactory, in spite of some positive elements - Non satisfactory

PART 1 : Results achieved and lessons learned

1 Assessing the intervention strategy

1.1 Context

Rwanda's Electricity Access Roll-out Program (EARP) was designed to achieve the GoR stated targets set out in Economic Development and Poverty Reduction Strategy (EDPRS II) covering the period 20012-2017 EDPRS. The GoR was even projecting an average annual growth of 11.5% between1 2013 and 2018. According to the GoR's vision, economic growth would be, among other things, driven by the uninterrupted provision of energy at prices that are stable and regionally competitive. This ambition called for both number of electricity connections to increase and existing power infrastructures upgraded and strengthened significantly, with a special emphasis on connecting productive uses, social infrastructures-health facilities, schools and administrative offices. EARP is a nationwide program operating under the Rwanda Energy Group (REG) which has a program management department for this purpose.

This represented a considerable financial challenge that could only be met with massive Government funding and support from development partners. The total cost of required investments was initially estimated to be 690 million USD over the period 2013 - 2018. Thus far, the REG planning was more focused on grid extension and for high voltage line construction or upgradation. However, a national distribution grid was needed to be permanently adapted to increasing demands, especially in rural development contexts where initial demand was very low but could grow quickly due to increasing household and especially industrial/productive use. In 2014, the total number of electricity connections was around 568712, roughly 20% of the access rate then. EARP target had then called for a total number of electricity connection to increase from 335,000 at the end of 2012 to 1,000,000 by 2018 with a special emphasis on connecting social infrastructurehealth facilities, schools and administrative offices.

The BE2 EARP, in this backdrop, was a pivotal contribution to GoR ambition of improving, expanding and strengthening electricity markets in Rwanda. The success and momentum built under EARP phase I prompted GoR to raise its sights higher for phase II in the EDPRS II. GoR was determined to build on the success of the first phase and learn lessons that can help to deliver the challenging 48% electrification target over the 5 years.

The project was hosted in EDCL and was implemented under the same co-management arrangement between EDCL and Enabel set up for BE1 EARP. As such the BE2 EARP intervention aspired not only to expanding and existing power networks abut also to improve the organization's performance and enhance Rwandan utility's ability to function and operation with enhanced capacity to respond to GoR's energy ambition within rapid changing environment.

The BE2 EARP was conceived as a part of the bilateral cooperation project between Belgium and Rwanda named "Improving access to reliable on-grid electricity services for households and priority public institutions – Belgian contribution to EARP (BE2 EARP)" which started in May 2015 for an initial duration of 4 years with a Belgian contribution of 12,000,000€. The general objective of BE1 was for the energy sector to be able to provide sufficient, reliable and affordable energy for all Rwandans

The project focused on increasing rural electricity access through national electricity grid extensions, improving grid electricity reliability and affordability and developing capacity within the utility.

1.2 Important changes in intervention strategy

Both the energy landscape and institutional context has evolved significantly since formulation of the project. During the initiation of the project, the government of Rwanda has a target of reaching 70% electricity access by 2018, which was later on revised to reach universal electricity access by 2024, with more emphasis on on-grid connections (48% off grid, 52% on-grid). In 2021, REG revised the target aiming for 69.1% of access to come from the extension of national grid, and that of 30.9% from off-grid connections.

BE EARP in general was focused on grid infrastructure and was embedded within EDCL, but the some of the capacity building scope was extended to include the entire institution of REG.

The BE2 EARP project is well aligned with the Government of Rwanda overall policies and strategies, and the project maintained its relevance to EDCL in a changing context through a responsive and highly flexible approach adapting to the needs of the utility.

The project BE1-EARP started in 17 December 2015. The project faced some design and implementation challenges in the early years of implementation. Almost every major works/supply contracts went through addendums, either for the time extension or for further adjustment of scope, in coping with current situation and priorities, thereby consequentially pushing the completion date of the projects further. However, despite the delays in the completion of electrification lots within the initial implementation period, all the activities were completed by project specific agreement period, Dec, 2020.

Another key adjustment that was made during the project was the decision to partly contribute to the completion of grid strengthening and upgradation works initially kept under BE3 EARP. Additionally all of the capacity building activities and the financing of the experts support were transferred to BE3 EARP with longer specific agreement period to allow the maximum continuation of the capacity building support to the REG/EDCL.

Changes intervening in the activities originally planned under BE1 and BE2 have resulted into some adjustment in budget and planning which to some extent brought about some additional delays. Two key investments planned for the extension of networks to serve key productive use and industrial areas and a supply of transformer to Shango substations initially foreseen under BE2 were dropped. This resulted to project delays which further triggered some further amendments of activities withing BE2 EARP and BE3 EARP.

With the start of the COVID-19 pandemic, the project saw further loss of efficiency. The project had been continuously adapting its strategies to ensure the full consumption of the budget. It's noteworthy that almost major works/supply contracts went through addendums either for the time extension or for further adjustment of scope thereby consequentially pushing the completion date of the projects further. But compared to the early years, if not for COVID-19 situation, most of the activities would have been completed on time. The last activity under BE2 which was aimed for grid upgradation in eastern province delayed exorbitantly for as long 12 months beyond the planned implementation period.

2 Results achieved

	Logical of the intervention	Indicators – Tentative target	Baseline Value	Target Value	Actual Value	Sources of verification	Comments
SO	The access to reliable on-grid electricity services for households and priority public institutions in rural areas is improved	National electricity access rate (%) – 48% Aggregated index of Access to Energy (global tracking framework)	22%	48%	55.8% by 2020 71.9% (as of May 2022) 28704	REG Reports Project reports	Actual connection includes the fill-in connections provided through REG branches
R1	Rural electricity is increased through national electricity grid extension (mixed with output 1 of project BE2-EARP)	Kilometres of MV lines constructed and energized	0	97	69.7	EARP Annual performance reports	
		Kilometres of LV lines constructed and energized	0	168	233.77	EARP Annual performance reports	Target exceed against the TFF values
		Number of distribution transformers and energized	0	54	60		
		Number of connections	0	8085	28704	Projects results report	Target exceeded

	Logical of the intervention	Indicators – Tentative target	Baseline Value	Target Value	Actual Value	Sources of verification	Comments
		Environmental Management Plan (EMP) developed	No	Yes	Yes	Projects results report	Complied
		Resettlement Action Plan (RAP) developed	No	Yes	Yes	Project reports	Complied
R2	Beneficiaries (households, productive and community uses) are supported in improving their tier access level	Activity cancelled.					
R3	Coherence and coordination are improved between EARP and off-grid energy access initiatives and the sector	Financing of key staff based at MININFRA (eSWAp secretariat) provided until end of 2018.					

2.1 Analysis of results

2.1.1 To what extent will the intervention contribute to the impact [4] (potential impact)?

BE2 EARP had primarily supply contracts which served the procurements meters, electrical equipment and wooden poles that were implemented through works contracts with local contractors. BE3 EARP together with BE1 EARP contributed to electricity network extension on targeted areas resulted to 17855 new connections (excluding fill in connections) in the five districts of Eastern Province regions.
Generally speaking, on average electrification interventions have positive effects on a range of education, socioeconomic welfare, health, and environmental outcomes. These effects were associated with considerable heterogeneity across the studies, which highlights the need to have more specific impact evaluation studies of electricity projects after couple of years of electrification projects.
These completed projects are expected to greatly contribute to the achievement of project's specific objectives and outcomes which also goes beyond the projects' implementation period. and also contributes to the objectives of new economic recovery plan set by Rwandan government in responding to mitigating economic impact of COVID-19 pandemic. Major components of such on-grid electricity infrastructure normally have a lifespan of over 20 years. The electricity networks laid down by this project will, therefore, continue to contribute to economic growth, employment generation and improvements in health and education facilities in the region over many years to come.

2.1.2 To what extent have outputs been achieved? Explain

Out of 3 key outputs provided on TFF, output 1 has been achieved to a greater extent. Output 2 was cancelled. For instance, through the construction of electrification networks in selected districts of Eastern province, the project contributed approximately 17800 new connections. Key outputs are provided below. Further, capacity building support in the selected utility domains contributed to the narrowing of the skills and knowledge gap across all result areas. Some adjustments were made during the project period in the selection of support areas.

<table>
<tr><th>Outputs</th><th colspan="4">Key achievements</th></tr>
<tr><td rowspan="3">OUTPUT1: Result 1: Rural electricity access is increased through national electricity grid extension</td><td>TETRA (BE2)</td><td>Connections: 2516
Transformers: 13
MV lines: 10.7km
LV Lines: 48.98 km</td><td>Kirehe District (Nyamugari, Mahama Sectors)</td><td>09/01/2018
C
20/12/2018
P
20/12/2019
F</td></tr>
<tr><td>ADHR Ltd (BE2)</td><td>Connections: 2043
Transformers: 12
MV lines: 17km
LV Lines: 45km</td><td>Kirehe District (Nyarubuye, Kigina, Mpanga Sectors)</td><td>28/12/2017
C
19/12/2018
P
19/12/2019
F</td></tr>
<tr><td colspan="4">Supply of safety equipment (protective personal equipment and tools)- Completed.</td></tr>
</table>

[4] Terminology : Impact = General Objective ; Outcome = Specific Objective; Outputs = Expected Result

OUTPUT2: Beneficiaries (households, productive and community uses) are supported in improving their tier access level	The activity was cancelled.
OUTPUT 3: Coherence and coordination are improved between	

Given both the BE1 EARP and BE2 EARP shared similar targets, went through adjustments across components, major achievements within BE1 EARP and BE2 EARP are consolidated as below;

Project	Indicators	Baseline value	Value Feb 2021	Estimated TFF Targets	End Target
BE1	Kilometres of MV lines constructed and energized	0	222.97 (79,9%)	160	279
	Kilometres of LV lines constructed and energized	0	554.84 (74,67%)	270	743
	Number of distribution transformers and energized	0	153 (73,2%)		209
	Number of connections	0	17,828 (106,6%)	14,500	16,718
	Environmental Management Plan (EMP) is developed	No	Yes		Yes
	Resettlement Action Plan (RAP) is developed	No	Yes		Yes
BE2	Kilometres of MV lines constructed	0	69.76 (81,1%)	97	86
	Kilometres of LV lines constructed	0	233.77 (142,5%)	168	164
	Number of distribution transformers	0	60 (111,1%)		54
	Number of connections	0	28,7045 (148,9% / 355% incl. fill-in connections)	68736	8,085

These includes 16,667 new connections from Fill-in new connections materials supplied to branches.
Through direct connections, excluding fill-in connections.

2.1.3 To what extent did outputs contribute to the achievement of the outcome

Outputs contributed to achievement of the outcome to a very good extent. The contributing factors included an significant increase in the electricity connection rate electricity from 2014 (20%) to 55.8% in 2020, of which BE1 and BE2 projects contributed close to= 18,000 connections. Various other indicators illustrated above holds a greater improvement of customer satisfaction. More details surveys and studies can be carried out by the utility or Enabel in coming years to gather a better picture of the project contribution both at the outcome and impact level. In general, construction of over 1000 km of power networks, over 250 km of network upgradation works as part of the BE EARP activities have provided a greater boost to the GoR universal electricity access target by 2024. Also, the practical and priority driver approach in the capacity building support to the utility across various domains is greatly appreciated by the partner.

2.1.4 Assess the most important influencing factors. What were major issues encountered? How were they addressed by the intervention? [7]

Some contractors and Consultants performed poorly and consequently two contracts went through significant delays with an average of as much as 9 months beyond the planned implementation period. However, it is important to note that the scope of work for each contract was increased by 20% without any additional time.

It is also important to note that most of the electrification projects feel the impact of the pandemic as the supply chain was disrupted since the beginning of February 2020 which further got exacerbated during the lockdown period owing to periodic movement restrictions and social distancing measures imposed to slow-down the COVID-19 situation for last two years of the BE2 electrification constructions period.

2.1.5 Assess the unexpected results, both negative and positive ones

One of the unique approaches adopted by BE EARP project was to encourage local contractors and supplier to participate in the construction of electric lines. Typically, one of the barriers for local bidders to participate in bigger contracts had been their limited financing. Even though project employed international contractors and suppliers for bigger tender, some of the larger works were broken down to multiple smaller activities (rather than one EPC contract) by separating supplies and works. This encouraged local contractors to participate in the construction works by not having to deliver the supplies that require huge upfront finances. out of over 1000km of power networks built, approx. 270km of networks has been built by employing Rwandan contractor. this approach has substantially improved the capacity building and know-how of local contractors and engineers in the process.

- Also, some of the supervision roles were internalized to utility departments (by supporting utility through TA/Capacity building activities). this approach can typically reduce 5-10% of construction cost.
- Quality assurance and technical support related to execution of the project have been continuously provided by engineers employed by Enabel and also by hiring external supervision engineers.

2.1.6 Assess the Integration of Transversal Themes in the intervention strategy

[7] Only mention elements that aren't included 1.1 (Context), if any.

- The project didn't have a gender specific activities in its implementation design. Most of our activities are gender blind, like construction of power networks, supplies and so on. BE EARP's general philosophy on gender is that women tend to benefit more from improved electricity access than their male counterparts. Nevertheless, the project collected disaggregated data on those indicators during project surveys.
-
- This also to note the project contributed to the preparation of gender profile on the energy sector that was finalized through the Study and Expertise Fund (SEF) and in close collaboration with the Gender Monitoring Office (GMO) in mid-2018.
-
- Enabel has also expressed its solidarity to Women in Rwandan Energy (WIRE) initiative pledging to contribute its resources that aligns with the objectives and priorities of its energy progrommes in the country. The project took three women apprentices for 3 months in collaboration with WIRE programme.

2.1.7 To what extent have M&E, backstopping activities and/or audits contributed to the attainment of results? How were recommendations dealt with?

M&E, backstopping and audit activities contributed to a very good extent, by ensuring that the project team kept in alignment with expected results, though in highly dynamic project environment. In the absence of a dedicated project M&E expert, the project developed process monitoring tools to ensure quality assurance, congruence with project objectives and partner country expectations. Furthermore, the project implemented recommendations of the Mid-term review (MTR), on the supervision of short-term project experts embedded withing the utility departments.

3 Sustainability

3.1.1 What is the economic and financial viability of the results of the intervention? What are potential risks? What measures were taken?

The links between infrastructure and development are well established. They include the impact of infrastructure on poverty alleviation, equity, growth and specific development outcomes such as job creation, market access, health and education.
Intervention areas of BE EARP primarily include the border districts like, Rubavu, Rusumo, Nyagarate, Ngoma as well as districts of economic prospects like Rwamagana, Kayonza that are geographically peripheral and economically pivotal where the increased electricity access and supply of reliability electricity holds a tremendous potential for economic boost.

This project has improved and established essential infrastructure that contribute to the reduction of technical losses, improvement of grid reliability and improvement of the security and quality of supply. Some potential risks include the quality of wooden poles that needs to be continuously monitored and maintained by the utility. Besides REG should focus a particular attention to the stimulate the demand as well as to improve the income base of its customers to ensure a timely return on its investment. The project was highly relevant and critical to REG which was facing enormous challenges to meet the Government of Rwanda energy target as well as upgrading the existing networks with limited financial, technical, and human resources.

3.1.2 What is the level of ownership of the intervention by target groups and will it continue after the end of external support? What are potential risks? What measures were taken?

Access to affordable and reliable energy remains a high priority for Rwanda. While the BE EARP contribute both to the extension and the strengthening of on-grid electrification targets, it will be necessary to further enhance the performance of the grid in the future. Operation of the distribution grid and ensuring reliability is a real time occupation. Apparently, the provision of electricity and affordability should be accompanied by broader measures to stimulate growth and revenue, which serves the real purpose of improving resilience and stability of the grid.

Coordination among the interdepending sectors- REG, state government, local government agencies and their lessons learned understanding and addressing the consumers' real requirements will continue to become vital in improving sustainability aspects of the grid. Lack of investment in capacity building in the short to medium term, low uptake of energy demand in the short to medium term and budgetary constrained at the utility level to invest in enhancing the operation and maintenance of the network can be considered as some of the potential risks.

Rwanda government and its regulatory agencies' continual efforts in collaboration with sector stakeholders exploring the available fiscal and policy measures in coordination with interdepending stakeholders sets a positive discourse on the matter.

3.1.3 What was the level of policy support provided and the degree of interaction between intervention and policy level? What are potential risks? What measures were taken?

Rwanda's National Strategy for Transformation (NST1) aims for the country to achieve middle-income status by 2035 and high-income status by 2050. As one of its core objectives, the strategy targets universal electricity access by 2024. On grid electricity access continued to become the priority of the Rwandan government since the inception of the BE EARP project. As of May 2022, the cumulative connectivity rate is 71.92% of Rwandan households including 50.61% connected to the national grid and 21.31% accessing through off-grid systems.

During the elaboration of the EDPRS II, the Government of Rwanda took a clear policy decision to diversify the sources of electricity from traditional dominant grid to include even off-grid connections. Subsequently, households far away from the planned national grid coverage have been encouraged to use alternatively cheaper connections such as Mini-grids and Solar Photovoltaics (PVs) to reduce the cost of access to electricity whilst relieving constraints on historical government subsidies (REG, 2022).

3.1.4 How well has the intervention contributed to institutional and management capacity? What are potential risks? What measures were taken?

At the institutional level, MININFRA/REG played a central role on the strategic project decision of all three phases of BE EARP activities.

There had been increased focus by REG in the coordination between EDCL and EUCL by integrating some of the key functions like Planning under one umbrella. The BE EARP project also financed several experts support to some of the key areas of expertise lik,e Planning, generation,

as experts support to energy sector coordination at MININFRA during the project period. These supports have been appreciated by MININFRA/REG to have contributed to the capacity building of these institutions and to enhance the efficiency, effectiveness and productivity of these institutions.

PART 2: Synthesis of (operational) monitoring

1 Expenses

An overview of expenses from FIT. The project saw 100% execution of the budget

TYPE	BUDGET CODE	DESCRIPTION	Budget	Management Mode	TOTAL EXP 2016-2018	EXPENSES Q3 2018-Q2 2019	EXPENSES Q3 2019-Q2 2020	EXPENSES Q3 2020-Q2 2021	EXPENSES Q3 2021-Q2 2022 06	TOTAL EXPENSES	% EXECUTION
	A	**Rural electricity connectivity is increased through national electricity grid extension**	9,514,991		3,643,232	212,098	211,738	3,612,492	2,275,625	9,955,185	105%
Result 1	A01	Build electricity network extension on targeted areas	9,513,389	Cogestion	3,224,473	212,098	206,636	3,588,950	2,275,625	9,521,593	100%
	A01-01-00	UBW Migration			-	32				32	#DIV/0!
	A01-01-00	*UBW Migration*	*3,231,981*	*Cogestion*	*3,224,473*	-		*20,744*	*51*	3,252,675	*101%*
	A01-01-01	*Contracts with electricity works contractor -*	*216,076*			*211,366*	*4,509*	*157*		215,718	*100%*
	A01-01-02	*MV/LV 11*	*596,474*		-	-	*25,756*	*320,615*	*5,968*	352,219	*59%*
	A01-01-03	*Connecting productive users*	*884*	*Cogestion*	-	*700*				1,043	*118%*
	A01-01-04	*Safety Equipment*	*1,085,568*		-	-		*1,020,072*	*23,048*	1,043,119	*96%*
	A01-01-06	*Fill-in connections materials*	*2,308,363*		-	-		*1,830,497*	*471,278*	2,301,775	*100%*
	A01-01-08	*EPC EASTERN PROVINCE*	*1,896,043*		-	-	*1,966*	*397,179*	*1,775,382*	2,174,527	*115%*
	A01-01-09	*JVNPD*	*178,000*		-	-	*178,914*	-		178,914	*101%*
	A01-02-00	Supervise the grid extension construction works	1,602	Cogestion	1,602	-				1,602	100%
	A01-02-00	*Consultancy services for construction supervision*	*402,188*	*Cogestion*	*1,602*	-				*1,602*	*0%*
	A01-03	Develop and implement EMP and RAP for network extension activity in compliance with	-	Cogestion	-					-	
	A01-03-00	Develop and implement EMP and RAP for network extension activity in compliance with	-	Cogestion	-					-	#DIV/0!
			-	Cogestion	-					-	#DIV/0!
Result 2	A02	**Beneficiaries (households, productive and community uses) are supported in improving their tier access level**	0		0					0	
Result 3	A03	**Coherence and coordination are improved between EARP and off-grid energy access initiatives and the sector**	450,036		410,036			23,541		433,592	96%
	A03-01	Support eSWAP in energy sector coordination	410,036	Cogestion	410,036	-		387		410,423	100%
	A03-05	Capitalize and communicate on lessons learned	40,000	Regie	-					-	0%
	A03-05-00	*Capitalize and communicate on lessons learned Scientific support/consultancy for capitalization paper*	*40,000*	*Regie*	-			23,154.66		*23,161*	*58%*
					-					-	#DIV/0!
X		**Contingency**	383		383					383	100%
Z	Z	**General means**	2,034,590		451,820	675,567	499,588	390,384	1,804	2,029,163	100%
	Z01	**01 Salaries**	1,720,594		410,852	580,811	443,305	283,982		1,718,951	100%
	Z02	**02 INVESTMENTS**	33,442	Regie	24,583	4,132	4,900	42		33,656	101%
	Z03	**03 Running costs**	156,771	Regie	21,679	49,511	31,368	16,684	52	119,294	76%
	Z03-09	**08 VAT Co management**	0	Cogestion	2,985	0				2,985	#DIV/0!
	Z04	**04 Audit and Monitoring & Evaluation**	114,791	Regie	14,592	39,972		51,249		105,812	92%
	99	**99 Conversion rate adjustment**	8,993		- 9,886	1,141	20,015	38,428	1,752	51,449	
		TOTAL	12,000,000	-	4,103,434	887,666	711,326	4,002,876	2,277,429	11,984,731	100%

2 Disbursement rate of the intervention

Source of financing	Cumulated budget	Real cumulated expenses	Cumulated disbursement rate	Comments and remarks
Direct Belgian Contribution	€1200000	€ 11,984,782	99.9%	
Contribution of the Partner Country	€ 1,650,000	€ 1,046,097	63.4%	
Other source	NA	NA	NA	

3 Personnel of the intervention

The flowing individuals were directly involved in the project execution.

Name	Function	Organization	Years
Christine Uwajeneza	Procurement Specialist	EDCL	2015 to 2020
Harriet MULISA	Contract Manager	EDCL	2017 till project end
Jean Paul Rutembesa	Project manager	EDCL	2014 till project end
Carine Vanommeslaeghe	Project RAFI	Enabel	2014 to 2016
Marie Vandenabeele	Project RAFI	Enabel	2018 till project end
Ntare Adabert	Project driver	EDCL	2014 to 2019
Abimana Lauben	Project driver	EDCL	2014 till project end
Bataringaya Simon	Project Site Engineer	EDCL	2015 till project end
Nyirahabyarimana Jeanne d'Arc	Project accountant	EDCL	2015 till project end
Harindintwari Uzziel	Project driver	EDCL	2020 till project end
Bibek Kandel	Project co-manager	Enabel	2017 till project end
Ahmad Parsa	Project co-manager	Enabel	2014 to 2018
Julien Jomaux	Technical Assistant	Enabel	2016 to 2020
Héloise Dubois	Junior Assistant	Enabel	2019 to 2020
Samuel Sonck	Junior Assistant	Enabel	2017 to 2018
Butera Michael	M&E speciliast	EDCL	2017 till project end
Tuyishime Pascal	Environmental Safeguards Specialist	EDCL	2017 till project end
Nyinawamwiza Muganga Petronille	EARP Social Safeguards Specialist	EDCL	2019 till project end
Nirere Marie Solange	Project Engineer	EDCL	2020 till project end
Nkurunziza Silas	Project Engineer	EDCL	2020 till project end
Munezero Yvette	Project Administrative Assistant	EDCL	2018 till project end
Munyambabazi Elias	Project Driver	EDCL	2015 till project end
Nkusi Innocent	Project Engineer	EDCL	2019 till project end

4. Public procurement

TENDER DESCRIPTION	SUCCESSFUL BIDDERS	CONTRACT DURATION	COMMENCEMENT DATE	CONTRACTUAL COMPLETION DATE	TOTAL AMOUNT (Euro)	REMARKS
Contract for supply of protective and safety equipment (Lot 1)	Eagle scientific ltd	5 months	08-Oct-19	28-Aug-20		ICB
Construction of MV & LV power line in Gahara-Kigarama sectors of Ngoma district (lot 1)	ADHR	9 months	22-Oct-19	31-Dec-20		National bidding
Construction of mV & LV power line in gatore, musaza & Kigarama sectors of Kirehe district (lot 2)	ADHR	9 months	22-Oct-19	31-Dec-20		National bidding
Grid strenghtening in Rwamagana, Kayonza and Ngoma (lot 3)	STOP Ltd	9 months	22-Oct-19	09-Dec-20		National bidding
Contract for supply of protective and safety tools (Lot 3)	Eagle scientific ltd	5 months	29-Oct-19	28-Aug-20		ICB
Design, supply, installation and commisioning of electrical equipment to upgrade Eastern province network from 17.32kV to 30kv (single to 3 phase)	BURHANI engineers Ltd	15 months from the commencement date	23-Jan-20	17-Jun-21		ICB
Supply of electrical materials for fill in connections (cables, meters, accessories)	Rousant International	7 months	03-Apr-20	03-Apr-21		ICB
Design, supply and installation of safety signs at REG activity locations	Creativa Ltd	2 months	08-Oct-20	30-Apr-21	-	National bidding

5. Equipment

List of equipment owned by the project Below is a list of equipment owned by BE EARP and shared among all the three interventions. The steering committee decided to hand over all the project equipment to EDCL

Equipment type	Cost in Euro	Delivery date	Status/Remarks
1. Vehicles			
TOYOTA Land Cruser IT539RE	26,358.99	10/31/2014	Good condition
TOYOTA Land Cruser IT453RE	26,358.99	10/31/2014	Good condition
SUZUKI Grant Vitara IT 378 RG	18,974.80	04/18/2017	Good condition
Total	**71,692.78**		
2. IT equipment			
Laptop Dell	1,033.92	9/30/2014	Out of usage
Laptop Dell	1,033.92	9/30/2014	Out of usage
Dell Screen Computer	123.3	3/18/2015	Good condition
Dell Screen Computer	123.3	3/18/2015	Good condition
French Keyboard	6.16	3/18/2015	Good condition
French Keyboard	6.16	3/18/2015	Good condition
Alcatel Router (4G)	79.99	4/2/2015	Out of usage
HP Flash 16 GB	24.31	11/14/2015	Out of usage
Laptop Dell	1,750.65	12/28/2015	Out of usage
Laptop Dell		12/28/2015	
Accessories to the laptop	522.38	12/28/2015	Good condition
1X synology disk station DS716	679.00	1/26/2017	Good condition
Lenovo laptop with accessories	1,832.66	4/14/2017	Good condition
Tablets Samsung	1,372.09	12/4/2017	Good condition
HP M130NW **Printer**	417.60	1/12/2019	Good condition
HP 250 Core I5/4GB/1TB Laptop	1,157.36	28/02/2019	Good condition
Logiciel comptable TOMPRO	3,700.00	23/06/2017	Good condition
Printer	452.47	28/12/2017	Good condition

Laptop	1,261.19	31/12/2017	Good condition
Keyboard USB Querty	21.16	29/01/2018	Good condition
1 HP Odyssey Backpack	32.13	29/01/2018	Good condition
Printer	1,181.36	27/05/2019	Good condition
Laptop	581.08	03/12/2019	Good condition
Laptop	581.08	15/05/2019	Good condition
Laptop	581.08	15/05/2019	Good condition
3 Screen Dell	841.22	15/05/2019	Good condition
Accessories to the laptop			
Total	**19,935.57**		

3. Others Equipments

2 licenses MS Office 2016	509.45	3/22/2016	Obsolete
Safe Godrej 40L	338.95	6/30/2016	In good condition
2 cupboards Libuyu	439.85	7/28/2016	In good condition
Malles métalliques	102.04	8/22/2016	In good condition
High Closed Cabinet	486.91	11/3/2017	In good condition
High Closed Cabinet	453.4	12/19/2017	In good condition
White Board	105.74	3/15/2018	In good condition
2 High Closed Cabinet	296.61	9/27/2019	In good condition
High Closed Cabinet	148.31	11/7/2019	In good condition
Computer Stand and drawers	202.43	11/7/2018	In good condition
Total	**3,083.69**		
Cumulative total	**95,340.39**		

1 Original Logical Framework from TFF :

	Logical of the intervention	Indicators – Tentative target	Baseline Value	Target Value	Sources of verification	Hypothesis
SO	The access to reliable on-grid electricity services for households and priority public institutions in rural areas is improved	National electricity access rate (%) – 48% Aggregated index of Access to Energy (global tracking framework)	20%	48%	REG Reports Project reports	On-Grid electricity is competitive to off-grid solutions. Generation capacity is increasing at least as fast as electricity demand.
R1	Rural electricity is increased through national electricity grid extension (mixed with output 1 of project BE2-EARP)	Kilometres of MV lines constructed and energized	0	97	EARP Annual performance reports	The O&M of the existing and new installations are properly performed by EUCL
		Kilometres of LV lines constructed and energized	0	168	EARP Annual performance reports	Target exceed against the TFF values
		Number of distribution transformers and energized	0	54		
		Number of connections	0	8085	Projects results report	Target exceeded
		Environmental Management Plan (EMP) developed	No	Yes	Projects results report	Complied
		Resettlement Action Plan (RAP) developed	No	Yes	Project reports	Complied

	Logical of the intervention	Indicators – Tentative target	Baseline Value	Target Value	Sources of verification	Hypothesis
R2	Beneficiaries (households, productive and community uses) are supported in improving their tier access level	Number of beneficiaries able to afford the connection in the intervention area Contribution of the beneficiary to the connection (RwF) Share of electricity expenses in households income Number of beneficiaries educated to electricity related issues			EARP annual performance report	Lessons learned from the pilot activities are utilized.
R3	Coherence and coordination are improved between EARP and off-grid energy access initiatives and the sector	Number of eSWG/year Number of TWG/year SWG recommendations are integrated in national strategies Access data, including consumption levels are integrated in MIS			EARP annual performance report	EUCL MIS is developed with WB support

2 Complete Monitoring Matrix

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4

	Logical of the intervention	Indicators – Tentative target	Baseline Value	Target Value	Actual Value	Sources of verification	Comments
SO	The access to reliable on-grid electricity services for households and priority public institutions in rural areas is improved	National electricity access rate (%) – 48% Aggregated index of Access to Energy (global tracking framework)	20%	48%	65% by 2021 73 (as of June 2022) 28704	REG Reports Project reports	Actual connection includes the fill-in connections provided through REG branches
R1	Rural electricity is increased through national electricity grid extension (mixed with output 1 of project BE2-EARP)	Kilometres of MV lines constructed and energized	0	97	69.7	EARP Annual performance reports	
		Kilometres of LV lines constructed and energized	0	168	233.77	EARP Annual performance reports M& E reports	Target exceed against the TFF values
		Number of distribution transformers and energized	0	54	60		
		Number of connections	0	8085	28704	EARP Annual performance reports	Target exceeded

	Logical of the intervention	Indicators – Tentative target	Baseline Value	Target Value	Actual Value	Sources of verification	Comments
						M& E reports	
		Environmental Management Plan (EMP) developed	No	Yes	Yes	Projects report	Complied
		Resettlement Action Plan (RAP) developed	No	Yes	Yes	Project reports	Complied
R2	Beneficiaries (households, productive and community uses) are supported in improving their tier access level	Activity cancelled.					
R3	Coherence and coordination are improved between EARP and off-grid energy access initiatives and the sector	Financing of key staff based at MININFRA (eSWAp secretariat) provided until end of 2018.					

5 Tools and products

Following are the communication materials produced and disseminated during the BE EARP project period.

- Switching to Lights: Stories of Change 2021

  web link: https://www.enabel.be/publication/switching-light-electricity-access-stories-change#:~:text=Rwanda%20has%20a%20target%20of,the%20Eastern%20Province%20of%20Rwanda

- Audio-visual material

  Audio video documentary capturing the stories change in BE EARP electrification project areas;

  https://www.youtube.com/watch?v=IgxGnt07ZF8&list=PLgnfcBtveF5PK27GZKBl3WvbXsUEXMfe6

List of equipment owned by the project
Below is a list of equipment owned bydjdhjdhjdthdtktu BE EARP and shared among all the three interventions. The steering committee decided to hand over all the project equipment to EDCL

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