



CTB



REPUBLIQUE DU RWANDA



RESULT REPORT 2012

PROJECT EPRER



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Acronyms

<List all acronyms used in the Annual Report (alphabetically; see examples below)>

GoR	Government of Rwanda
MININFRA	Rwanda Ministry of Infrastructure
MINECOFIN	Rwanda Ministry of Finance and Economic Planning
MINAFFET	Rwanda Ministry of Foreign Affairs and Cooperation
EWSA	Energy, Water and Sanitation Authority
BTC	Belgian Development Agency
SMCL	Structure mixte de concertation locale
M&E	Monitoring and Evaluation
MHPP	Micro Hydro Power Plant/Project
HC	Health Center
PV	Photovoltaic
LV	Low voltage (LV < 0.4 kV)
MV	Medium voltage (0.4 kV < MV < 30 kV)
HV	High voltage (30 kV < HV)
ASAP	As soon as possible
SWAp	Sector wide approach
PSC	Project Steering Committee
EDPRS	Economic Development and Poverty Reduction Strategy
CB	Capacity Building
PIPO	Planification of interventions per objective
kW	Kilo-Watt (power)
MWh	Mega-Watt hours (energy)
TFF	Technical and Financial File
JLCB	<i>Joint Local Consultative Body</i>



1. Intervention overview

1.1 Project form

<i>Project name</i>	Access to electricity for the rural population by utilization of renewable energy. (EPRER)
<i>Project Code</i>	RWA 07 055 11 - RWA 10 077 11
<i>Location</i>	Rwanda
<i>Budget</i>	€ 17 532 659 (Be) € 1 801 000 (GoR)
<i>Key persons</i>	Intervention Director, Co-manager
<i>Partner Institution</i>	Rwandese Ministry of Infrastructure (MININFRA) Energy, Water and Sanitation Authority (EWSA)
<i>Date of implementation Agreement</i>	December 19 th 2007
<i>Duration (months)</i>	71 months +12 months
<i>Target groups</i>	Rural population of Rwanda
<i>Impact (Global Objective)</i>	Socio-economic development of the population and the improvement of their living conditions
<i>Outcome (Specific Objective)</i>	Put relatively cheap electric energy at the rural population's disposal during times of lower consumption
<i>Outputs</i>	R1: Electricity production from renewable energy sources has increased
	R2: Electricity access has increased thanks to the electricity distribution grid extension
	R3: Institutional support has been provided to electricity agencies at national and regional levels.

1.2 Performances of project

Intervention logic	Efficiency	Effectiveness	Sustainability
Outcome (Specific objective)	B	B	B
Output 1: Production	B	B	C
Output 2: Grid Extension	A	A	A
Output 3: Institutional support	A	A	A

1.3 Budget execution

Total budget	Expenditure year 2012 (31/12/2012)	Balance	Execution rate
17.532.659 €	1.291.139,09 €	1.333.810,60 €	92

1.4 Summary

<ul style="list-style-type: none">• A new national electricity utility has been created in 2011: Energy Water and Sanitation Authority• (EWSA). Part of the EPRER project team has been shifted from MININFRA to the EWSA implementation unit.
<ul style="list-style-type: none">• More ambitious national energy targets have been set by the Government of Rwanda (1000 MW in 2017)
<ul style="list-style-type: none">• The 3 MHPP of Western Province (Cyimbili, Nkora and Keya) have been commissioned in 2011 and are now producing electricity from renewable sources.
<ul style="list-style-type: none">• The construction of Rukarara II MHPP is 6 months behind the schedule and the new schedule from the contractor expects works to be completed by end March 2013; civil works were on-going at the end of 2011 and it is still the critical part of work execution as transmission line is completed and hydro mechanical equipment already installed.
<ul style="list-style-type: none">• There are ongoing negotiations regarding a extra amount of € 2.9 Mio claimed by the contractor.

National execution officer	Execution officer BTC
Félicien Ndabamenye	Valéry Pirotte

2. Analysis of the intervention

2.1 Context

2.1.1 General context

A new national electricity utility has recently been established: **Energy Water and Sanitation Authority (EWSA)**, replacing the former electricity company known as the Rwanda Electricity Corporation (RECO). The implementation aspects of the Energy Policy/Strategy have been separated from the policy-making and overall coordination role of MININFRA. The implementation role has been shifted to EWSA. This shift has led to the relocation of a part of the EPRER project team to EWSA offices.

In 2011, MININFRA was reorganized, with a new minister of state and permanent secretary: Eng. Emma Francoise ISUMBINGABO is the new Minister of State in charge of Energy and Water, James KAMANZI is the new Permanent Secretary.

The **national energy strategy** has also been reviewed by the GoR with higher energy targets. The overall target is to increase the electricity access rate to 50% and to develop over 1000 MW additional generating capacity by 2017 through the following actions:

- (a) Increase **hydropower** generation to about 320 MW
- (b) Develop **geothermal** power plants with capacity of 310 MW
- (c) Generate power from **methane gas** to deliver 300 MW
- (d) Generate power from **peat** to deliver 200 MW
- (e) Strengthen and expand the **transmission lines** by an additional 2100 km
- (f) Reach a total of **1,200,000 connections** to the electricity grid
- (g) Electrify 100% of schools, health facilities and sector offices
- (h) Saving of 50 MW through introduction of **energy efficiency** measures, and development of energy efficiency standards and regulations

2.1.2 Institutional Context

Strengths: All the EPRER projects activities fit in the frame of the energy strategy of the GoR aiming to give electricity access to the Rwandan population. Ambitious goals have been established by the government since energy access has been identified as a priority for the socio-economic development of the country. « Economic Development and Poverty Reduction Strategy » (EDPRS) covers the 2008-2012 period. This is the short-term strategy to realize the medium term targets (Millennium Development Goals”) in 2015 and the longer-term development goals of the country: Rwanda 2020 Vision. All of those targets include electricity access targets wherein EPRER project finds a good place.

Challenges: 2011 and 2012 have seen a significant evolution of the institutional context. Adaptation during those transition phases remain a challenge for the project team that has to deal with a new organization and new people and policies.

2.1.3 Management context: Execution Modalities

Strengths: The projects are performed in co-management. MININFRA/EWSA is thus the contracting authority and the public tender Rwandan legislation is applicable on all the co-management project activities. The Intervention director and the co-management delegate ensure the strict application of the legislation, detailed in the BTC manual on the application of procurement procedures according to Rwandan law. They take part in the offers opening and analysis.

MININFRA and EWSA also ensure:

- (a) easy access to any documentation or necessary information for the implementation of activities
- (b) any relevant services necessary for the project implementation

In terms of financial modalities, obligations on financial contributions from the Rwandan part are respected, as given in the Specific Agreement and the TFF, which is part of the Convention.

A project steering committee is established to take important decisions on the project. It is composed of a MININFRA representative (PSC Chair), a MINAFFET representative, a MINECOFIN representative and of the BTC resident representative (Vice Chair). It is MININFRA's responsibility to organize this meeting. In 2012, there were three PSC meetings: 04/04/2012, 13/07/2012 and 14/11/2012.

Challenges: Heavy administrative procedures can significantly delay an activity waiting for simple authorization.

2.1.4 Harmo context

The new electricity and gas law was developed in order to encourage private sector participation to the energy development of Rwanda. A sector wide approach (SWAp) was adopted in the electricity sector to harmonize all the stakeholder's actions and align them to government priorities.

As the erosion of the banks of the rivers has a very important influence on the operation of the micro-hydro power plants, the project emphasizes the collaboration between the partner (EWSA) and other Ministries like Ministry of Natural Resources (MiniReNa) and Ministry of Agriculture (MinAgri). In order to integrate the policies of the different actors impacted by the erosion coordination meetings are organized on regular basis.

A coordination organ has been set up, called Sector Working Group for Energy, This working group is joined by all institutional actors, donors, international institutions and development banks, active in the energy sector in Rwanda.

2.2 Outcome (Specific objective)

The specific objective is **“Put relatively cheap electric energy at the rural population's disposal during times of lower consumption”**

The objective of relatively cheap electricity for rural population is strongly dependent of (1) the production of electricity by renewable and local energy sources, (2) the transmission and distribution of this electricity to the beneficiaries, (3) an adequate institutional framework.

- (1) The production of electricity through renewable energy has been increased thanks to a MHPP of 300 kW hydro power and 46 HC equipped with PV solar panels. The MHPP inject electricity in the national network. The production cost is significantly lower than the existing thermal assets and pushes the electricity production prices downwards. This has a direct consequence on the resale electricity prices for the rural users that are connected to the national network. The electricity produced by the solar panels on the health centers is not injected to the network but directly benefits the rural population coming to the HC. This electricity is relatively cheap in the sense that it is an alternative to very expensive fuel generator sets.
- (2) The electricity production has to be transmitted and distributed to the rural centers so that the rural population has access to this electricity. The link between the second result and the specific objective is thus straightforward.
Distribution and transmission grid have to be extended to reach rural populations that live far from the original network.
- (3) Efficient local institutions are essential to guarantee that the specific objective is reached. The support to the local institution should thus contribute to provide cheap electricity to rural population by ensuring good management and maintenance of infrastructure, adapting policies, drafting relevant strategies, etc.

2.2.1 Analysis of progress made

Specific objective: "Put relatively cheap electric energy at the rural population's disposal during times of lower consumption"						
Indicators	Baseline value	Progress 2011	Progress 2012	Target 2012	End Target	Comments
Electricity production cost (RwF/kWh)	70	67	67	60	60	National data
Annual electricity production (GWh)	237	353	418	400	450	National data
Electricity access rate (%)	5	11	14.5	16	50	National data
Analysis of progress made towards outcome: Analyse the dynamics between the outputs achieved and the likely achievement of the Outcome (see Results Report Guide):						
<i>Relation between outputs and the Outcome. (How) Are outputs (still) contributing to the achievement of the outcome:</i>		Renewable energy is the best way to provide cheaper electricity. Increasing the production capacity prevent frequent black-out, especially for the rural population. Extension of the grid allows more retired people to access to electricity.				
<i>Progress made towards the achievement of the outcome (on the basis of indicators):</i>		The commissioning of the HPP in the western province in 2011 and the extension of the electrical lines increase the access of rural population to electricity.				
<i>Issues that arose, influencing factors (positive or negative):</i>		The expropriations needed to achieve the projects were an unexpected issue which arose. This issue tempered the satisfaction of the population regarding electricity access.				
<i>Unexpected results:</i>		The exploitation of the sand which is extracted from the river to protect the turbine is an unexpected opportunity				



2.2.2 Risks Management

Risk Identification			Risk analysis			Risk Treatment			Follow-up of risks	
Description of Risk	Period of identification	Risk category	Probability	Potential Impact	Total	Action(s)	Resp.	Deadline	Progress	Status
Political risks and opportunities: - Recurrent re-structuration - Objectives change - Priority shifts	2008-2012	Rep	Medium	Medium	B					
Lack of coordination between the energy stake holders, causing overlap of interventions, double studies, ...	2008-2012	Dev	Medium	Medium	B					
Natural uncertainties linked to renewable energies ; External factors as climate have a strong impact on renewable energy production	2008-2012	Dev	Medium	High	C	Reinforce the quality of the prefeasibility studies and internal technical competences for next projects	RepRwa	Continuous	Initiated	In progress
Capacity and good will of institutions	2008-2012	Dev	Medium	High	C	Reinforce the institutional capacity building program	RepRwa	Next PIC	Not started	Not started

2.2.3 Potential Impact

The project specific objectives contribute actively to the Rwandan sectorial objective, i.e. the national energy strategy and the EDPRS. Indeed, the national energy strategy target is to increase the electricity access rate to 50% (this can not be reached without spreading electricity in rural areas), and to develop over 1000 MW additional generating capacity, mainly based on local renewable resource, hydropower among others. The specific objective also contribute to EDPRS target that states that 100 % of the schools and the health facilities should be electrified by 2012.

The specific objectives also contributes to the projects global objectives: the socio-economic development of the population and the improvement of their living conditions. In fact, the energy sector in general, and electricity in particular, significantly contributes to sustainable economic growth, social development and the fight against poverty. Electrification is an opportunity to trigger the creation of productive activities. Experience shows that, after a few months, electrification is followed by:

- Cereal mills, facilitating grinding work, mostly done by women
- Batteries load stations, to give place for improvements of lighting and radios. Those two elements are bases for knowledge and increase the chance to create profitable activities.
- Small industrial activities of all kinds, as coffee washing stations for example.

2.2.4 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		
<i>In order to calculate the total score for this Q-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</i>		
1.1 What is the present level of relevance of the project?		
<input checked="" type="checkbox"/>	A	Clearly still embedded in national policies and Belgian strategy, responds to aid effectiveness commitments, highly relevant to needs of target group.
<input type="checkbox"/>	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.
<input type="checkbox"/>	C	Some issues regarding consistency with national policies and Belgian strategy, aid effectiveness or relevance.
<input type="checkbox"/>	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?		
<input type="checkbox"/>	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).
<input checked="" type="checkbox"/>	B	Adequate intervention logic although it might need some improvements regarding hierarchy of objectives, indicators, Risk and Assumptions.
<input type="checkbox"/>	C	Problems with intervention logic may affect performance of project and capacity to monitor and evaluate progress; improvements necessary.
<input type="checkbox"/>	D	Intervention logic is faulty and requires major revision for the project 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 (assessment for the whole of the intervention)		
<i>In order to calculate the total score for this Q-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</i>		
2.1 How well are inputs (financial, HR, goods & equipment) managed?		
<input type="checkbox"/>	A	All inputs are available on time and within budget.
<input checked="" type="checkbox"/>	B	Most inputs are available in reasonable time and do not require substantial budget adjustments. However there is room for improvement.

<input type="checkbox"/>	C	Availability and usage of inputs face problems, which need to be addressed; otherwise results may be at risk.
<input type="checkbox"/>	D	Availability and management of inputs have serious deficiencies, which threaten the achievement of results. Substantial change is needed.
2.2 How well are outputs managed?		
<input type="checkbox"/>	A	All outputs have been and most likely will be delivered as scheduled with good quality contributing to outcomes as planned.
<input type="checkbox"/>	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.
<input checked="" type="checkbox"/>	C	Some output are/will be not delivered on time or with good quality. Adjustments are necessary.
<input type="checkbox"/>	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 Q-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

3.1 As presently implemented what is the likelihood of the outcome to be achieved?

<input type="checkbox"/>	A	Full achievement of the outcome is likely in terms of quality and coverage. Negative effects (if any) have been mitigated.
<input type="checkbox"/>	B	Outcome will be achieved with minor limitations; negative effects (if any) have not caused much harm.
<input checked="" type="checkbox"/>	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.
<input type="checkbox"/>	D	Project will not achieve its outcome unless major, fundamental measures are taken.

3.2 Are activities and outputs adapted based on the achieved results in order to the outcome (Specific Objective)?

<input type="checkbox"/>	A	The project 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.
<input checked="" type="checkbox"/>	B	The project is relatively successful in adapting its strategies to changing external conditions in order to achieve its outcome. Risks management is rather passive.
<input type="checkbox"/>	C	The project 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 project can achieve its outcome.
<input type="checkbox"/>	D	The project has failed to respond to changing external conditions, risks were insufficiently managed. Major changes are needed to attain the outcome.

3. 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 Q-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

3.1 Financial/economic viability?

<input type="checkbox"/>	A	Financial/economic sustainability is potentially very good: costs for services and maintenance are covered or affordable; external factors will not change that.
<input checked="" type="checkbox"/>	B	Financial/economic sustainability is likely to be good, but problems might arise namely from changing external economic factors.
<input type="checkbox"/>	C	Problems need to be addressed regarding financial sustainability either in terms of institutional or target groups costs or changing economic context.
<input type="checkbox"/>	D	Financial/economic sustainability is very questionable unless major changes are made.

4.2 What is the level of ownership of the project by target groups and will it continue after the end of external support?

<input type="checkbox"/>	A	The JLCB and other relevant local structures are strongly involved in all stages of implementation and are committed to continue producing and using results.
<input type="checkbox"/>	B	Implementation is based in a good part on the JLCB and other relevant local structures, which are also somewhat involved in decision-making. Likelihood of sustainability is good, but there is room for improvement.
<input checked="" type="checkbox"/>	C	Project uses mainly ad-hoc arrangements and the JLCB and other relevant local structures to ensure sustainability. Continued results are not guaranteed. Corrective measures are needed.
<input type="checkbox"/>	D	Project 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 project and policy level?		
<input type="checkbox"/>	A	Policy and institutions have been highly supportive of project and will continue to be so.
<input checked="" type="checkbox"/>	B	Policy and policy enforcing institutions have been generally supportive, or at least have not hindered the project, and are likely to continue to be so.
<input type="checkbox"/>	C	Project sustainability is limited due to lack of policy support. Corrective measures are needed.
<input type="checkbox"/>	D	Policies have been and likely will be in contradiction with the project. Fundamental changes needed to make project sustainable.
4.4 How well is the project contributing to institutional and management capacity?		
<input type="checkbox"/>	A	Project is embedded in institutional structures and contributed to improve the institutional and management capacity (even if this is not a explicit goal).
<input checked="" type="checkbox"/>	B	Project 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.
<input type="checkbox"/>	C	Project relies too much on ad-hoc structures instead of institutions; capacity building has not been sufficient to fully ensure sustainability. Corrective measures are needed.
<input type="checkbox"/>	D	Project is relying on ad hoc and capacity transfer to existing institutions, which could guarantee sustainability, is unlikely unless fundamental changes are undertaken.

Criteria	Score
Effectiveness	B
Efficiency	B
Sustainability	B
Relevance	A

2.3 Output 1

2.3.1 Analysis of progress made

Result 1: "Electricity production from renewable energy sources has increased"						
Indicators	Baseline value	Progress 2011	Progress 2012	Target 2012	End Target	Comments
Annual energy production per MHPP (MWh); - Cymbili - Rukarara	0 0	0 0	510 0	1707 0	1707 11 813	Cymbili MHPP (300 kW) was inaugurated in October 2011. It was expected that RUKARARA II MHPP would inject 2 MW in the network from July 2012, but this did not happen due to delays in work execution
Number of electrified HC	0	39	46	46	46	4 out of 50 identified HC were found electrified by other partners (2 by Access & 2 by Global fund. Since it was found that lightning destroyed about 6 PV systems, the remaining budget is to be used for installation of protective equipments on 20 HC located in most vulnerable areas (Western province)

Progress status of main Activities (See guidelines for interpretation of scores)	Progress:				Comments (only if the value is C or D)
	A	B	C	D	
1. Cymbili MHPP construction		X			Done
2. Study and follow-up of the MHPP works in the southern province (Rukarara II)		X			
3 .MHPP construction in the southern province (Rukarara II)				X	Significant delays were encountered on Rukarara II-by the end it is a wish to complete the works by end of march 2013
4. Study and following of health centers electrification		X			Done
5. Health centers electrification		X			Done
6. Renewable energy pilot projects				x	The contract for evaluation of energy kiosk was to be signed but it still pending since October 2012
7. Supply of lightning rod for protection PV systems at HC			X		Offer analysis was done in November and the contract was supposed to be signed Mi-December. The contractor has already signed

Analysis of progress made towards output: Analyze the dynamics between the activities and the probable achievement of the Output (see Results Report Guide).	
<i>Relation between activities and the Output. (how) Are activities contributing (still) to the achievement of the output (do not discuss activities as such?):</i>	The main activities consist in the following-up of the Rukarara II project.
<i>Progress made towards the achievement of the output (on the basis of indicators):</i>	As the Rukarara II plant does not produce electricity, there is no progress toward achievement recorded in 2012.
<i>Issues that arose, influencing</i>	Delays in the construction of the plant Rukarara II influence negatively the

<i>factors (positive or negative):</i>	progress of the project
<i>Unexpected results (positive or negative):</i>	

2.3.2 Budget execution

See annex 3 for more details

For the result 1, the financial execution rate at the end of 2012 was 92%, i.e. € 5.989.891, 21 on a total of € 7.042.335,3.

2.3.3 Quality criteria

Criteria	Score
Effectiveness	B
Efficiency	B
Sustainability	C

2.4 Output 2

2.4.1 Analysis of progress made

Result 2: "Electricity access has increased thanks to the electricity distribution grid extension"						
Indicators	Baseline value	Progress 2011	Progress 2012	Target 2012	End Target	Comments
MV lines constructed by the project (km)	0	130	170	175	175	Last 5 km in the Southern line was achieved in 2012.
Number of rural centers connected to the MV network by the project	0	21	48	48	48	
Number of schools electrified by the project	0	19	38	38	38	

Activities (See guidelines for interpretation of scores)	Progress:				Comments (only if the value is C or D)
	A	B	C	D	
1 Study and follow-up of MV lines and LV network work	X				
2 Construction of the MHPP interconnection lines in the districts of Rutsiro and Rubavu	X				
3 Extension of the MV line Kigali – Kiyumba	X				
4 Construction of the MHPP interconnection line in Nyaruguru district	X				

Analysis of progress made towards output: Analyse the dynamics between the activities and the probable achievement of the Output	
<i>Relation between activities and the Output. (how) Are activities contributing (still) to the achievement of the output (do not discuss activities as such?):</i>	All activities are finished
<i>Progress made towards the achievement of the output (on the basis of indicators):</i>	
<i>Issues that arose, influencing factors (positive or negative):</i>	
<i>Unexpected results (positive or negative):</i>	

In order to realize result 2, the MV electricity transport network has to be extended, to interconnect the MHPP and to feed the rural centers. Those are connected to the national MV network and fitted with a LV distribution network that provides electricity to their populations.

Concretely, the activities are the following:

- The extension of the Kigali – Kiyumba (KIKI) MV line, yet 100% completed in 2010, allowing 17 rural centers, including 19 schools, to connect to the network.
- The western electric lines interconnection (Rutsiro and Rubavu districts), completed in 2010, adding 9 electrified rural centers to the 3 centers already electrified in 2010. A total of 12 rural centers, including 12 schools have thus been electrified in the Western province.
- The extension of the Southern electrical lines is 100% completed by February 2012. Such works has electrified 9 rural centers, including 7 schools in the Southern province.

An unforeseen result of those activities is the current project of financing, with remaining EPRER budget, the Keya action plan whose objective is to create a sustainable protection of Keya MHPP.

2.4.2 Budget execution

See annex 3 for more details

For the result 2, the financial execution rate at the end of 2011 was 99, 8%, i.e. € 9.0.43.963,33 on a total of € 9.061.726,15.

2.4.3 Quality criteria

Criteria	Score
Effectiveness	A
Efficiency	A
Sustainability	A

2.5 Output 3

2.5.1 Analysis of progress made

Result 2: "An institutional support has been provided to electricity agencies at national and regional level."						
Indicators	Baseline value	Progress 2011	Progress 2011	Target 2012	End Target	Comments
Number of support activities financed by the projects	0	6	3	/	/	
Number of trained and operational technicians (MHPP and solar installations)	0	52	37	/	/	
Number of staff who benefited funds for post graduate masters			3			

Activities	Progress:				Comments (only if the value is C or D)
	A	B	C	D	
1. Addition works at Keya and Cyimbili MHPP		X			
2. Possibility of co-financing together with Wallonia fast start program capacity building program by training local private entrepreneur in construction of pico hydro power plants		X			

Analysis of progress made towards output: *Analyse the dynamics between the activities and the probable achievement of the Output (see Results Report Guide).*

<i>Relation between activities and the Output. (how) Are activities contributing (still) to the achievement of the output (do not discuss activities as such?):</i>	Activities will improve the reliability of the plant.
<i>Progress made towards the achievement of the output (on the basis of indicators):</i>	
<i>Issues that arose, influencing factors (positive or negative):</i>	
<i>Unexpected results (positive or negative):</i>	

Overall we can conclude that the institutional support in the year 2012 has been fruitful and has passed without having to overcome great obstacles or unforeseen circumstances.

2.5.2 Budget execution

See annex 3 for more details

The budget execution rate at the end of the year 2012 for institutional support in specific was 91%. A sum of 300.000 Euro was available at the start of the project, but only 271.745,20 Euro was used so far. In 2012 44.921,60 Euro were used, leaving another 28.254,2 Euros left for the project in the year 2013.

2.5.3 Quality criteria

Criteria	Score
Effectiveness	A
Efficiency	B
Sustainability	C



3. Transversal Themes

3.1 Gender

Various indications show that women tend to benefit more from electrification than men, especially in rural areas. Although it is hard to quantify these differences, common sense as well as insight by external studies can bring some of these dynamics in which women's advantages are higher to the foreground.

Part of the socio-cultural role of women in Rwanda is often to spend long hours looking for wood to carry back home for energy production. Besides the fact that this is very time consuming, the work is also very strenuous implicating that over long term it can damage their health. Once they return to home, they are likely to be exhausted and it therefore restricts them from other educational or economic activities.

Furthermore, we note that it is also women who tend to receive the highest part of the burden on health when using other energy provision methods when electricity is not available. For instance, women are almost always responsible for cooking in a rural context. During this activity they frequently use open fires producing unventilated smoke which in turn exposes them to particulate matter, carbon monoxide and other pollutants.

3.2 Environment

The EPRER project benefits the environment in many ways. Most importantly it contributes to a shift in the energy provision balance towards sustainable energy. Electricity produced by hydro plants decreases the need for energy coming from hard fuels, peat and others which can damage the environment.

The availability of electricity will also decrease the need of rural villagers to use wood and charcoal for their energy needs. Deforestation will decrease and therefore the capacity of our planet to digest pollution and to filter the air will increase both because of a greater amount of trees as well as because of the lower pollution caused by cooking fires.

The availability of information through radio and television running on electricity will also increase awareness concerning global warming, pollution and other challenges our planet is facing.

Nevertheless, there can also be negative side effects on the environment resulting from the EPRER project on a local scale (modification of the river flow for example).

3.3 Other : Aids

Access to electricity greatly improves the possibilities for households to obtain information through media outlets. Often, electricity access results in the acquisition of a radio or a television. The higher exposure to media can eventually result in households to be more prone to receive information from sensitization campaigns and hence increases their awareness on aids/HIV. In the same way they will learn about anti conception and this will in turn decrease fertility rates as well as the transmission of the disease through birth.

The previously described advantages on general health as well as the higher time available for education can also transfer into decreased chances of both adopting the disease as well as transferring it.

In addition, electrification brings about the possibility of refrigeration which greatly enhances the lifespan of medicine. Electrified health centers will have more means at their disposal to effectively combat aids/HIV and other diseases.

4. Steering and learning

4.1 Action Plan

Decisions	Source	Actor	Time of decision	Status
The PSC meeting should take a decision about the extension of the contract of the Co-Manager, ending on 31 st march 2013	Result 1	EWSA, BTC,	Feb 2013	Proposal submitted
The PSC will have to state the responsibilities in the implementation of sustainability measures regarding the MHPP in Western Province.	Result 1	EWSA, BTC	March 2013	Action plan is defined and approved – Implementation in progress
For Rukarara II, the PSC noted that the project is about 6 months behind schedule. To avoid delays, the contractor has to resume the works immediately and take in consideration of completion date by end of March 2013.	Result 1	EWSA, BTC, Kochendörfer & FEE	Jan 2013	Discussion ongoing

4.2 Lessons Learned

Lessons learned	Target audience
<p>The technical and organizational assessment of a contractor cannot be based on the offers only. Evaluators have to evaluate the capacities by checking conscientiously the references and experiences</p>	<p>Project implementation teams, procurement officer</p>
<p><i>To ensure an adequate project management cycle, a good monitoring and evaluation in particular, the indicators should be properly formulated (SMART). They often remain too vague to evaluate the progress made and this can cause a diversion from the original objectives</i></p>	<p>Project formulation team</p>
<p>To attach more importance to the quality and the accuracy of the tenders and the contracts: a lack of technical details and specifications in the tender, together with ambiguous clauses in the contract can lead to unsolvable dispute with the contractor. It is necessary to take a legal advice during the elaboration of the contracts.</p>	<p>Procurement unit and Project management team</p>

5. Annexes

5.1 Original Logical framework

Results	Results indicators	Verification source	Risks and hypotheses
R1. Electricity production from renewable energy sources has increased	<ul style="list-style-type: none"> • Energy production per MHPP • Number of electrified HC 	Statistics from EWSA, MININFRA and MINISANTE	<ul style="list-style-type: none"> • The management and maintenance of the MHPP are done by EWSA
Activities per results	Means	Costs in Euros	Risks and Hypotheses
1.1. Cyimbili MHPP construction	Contractor	1.375.152,00 €	
1.2. Study and follow-up of the MHPP works in the southern province	Study bureau	551,000,00 €	The studies confirm the feasibility
1.3 .MHPP construction in the southern province (Rukarara II)	Contractor	3.410.162,47 €	The Rwandan contribution is equivalent to 1.801.000 € for expropriation
1.4. Study and following of the health centers electrification	Study bureau	131,020.82 €	The studies confirm the feasibility
1.5. Health centers electrification	Contractor	1.375.000 €	The maintenance is done by the technical services of MINISANTE
1.6. Pilote installation of energy	Contractor	200.000,00 €	
	Total for Energy production	7.042.335,30 €	

Results	Results indicators	Verification source	Risks and hypotheses
R2. Electricity access has increased thanks to the electricity distribution grid extension	<ul style="list-style-type: none"> • MV lines constructed by the project (km) • Number of rural centers connected to the MV network by the project • Number of schools electrified by the project 	Statistics from EWSA, MININFRA and MINISANTE	<ul style="list-style-type: none"> • The management and maintenance of the installations are done by EWSA
Activities per results	Means	Costs in Euros	Risks and Hypotheses
2.1 Study and follow-up of MV lines and LV network work	Study bureau	347,605.00 €	The Rwandan contribution is equivalent to 1.0801.000€ for expropriation
2.2 Construction of the MHPP interconnection lines in the districts of Rutsiro and Rubavu	Contractor	1.862.989,19 €	
2.3 Extension of the MV line Kigali – Kiyumba	Contractor	2.183.697,96 €	
2.4 Construction of the MHPP interconnection line in Nyaruguru district	Contractor	4.667.434,00 €	
	Total for lines and network	9.061.726,15 €	

Results	Results indicators	Verification source	Risks and hypotheses
R3. An institutional support has been provided to electricity agencies at national and regional level	Number of support activities financed by the project	<ul style="list-style-type: none"> ○ PV of the PSC meetings ○ Analytical accountancy 	<ul style="list-style-type: none"> ○ The GoR keeps financing the agencies
Activities per results	Means	Costs in Euros	Risks and Hypotheses
1.1. Institutional support to national agencies	expertize	150.000 €	The national agency for renewable energy is operational
1.2. Institutional support to regional agency (EGL)	expertize	150.000 €	The Great Lakes countries support the EGL agency
	Total for institutional support	300.000 €	

Results	Results indicators	Verification source	Risks and hypotheses
X. Reserve		61.924,00 €	

Global execution means	Human resources	Belgian contribution	Rwandan contribution
1. Personal	Minima, EWSA & CTB	765.300,00 €	66.000 €
2. Investments		73.097,44 €	
3. Operating costs	Mininfra, EWSA & CTB	125.276,12 €	60.000 €
4. Audit, Monitoring and Evaluation	Mininfra, EWSA & CTB	102.999,99 €	
	Total for global execution means	1.066.673,55 €	126.000 €

TOTAL EPRER (parts 1 & 2)	17.532.569 €	1.800.000 €
	19.332.569 €	

5.2 Updated Logical Framework

5.3 MoRe Results at a glance

Management and daily following of the project are done by the project management team.

In addition specific monitoring and evaluation activities are currently being performed on some activities:

- Daily follow-up of the MHPP working field Rukarara II by the consultant *SHER Ingénieur Conseils*.
- Technical audit of the transmission lines
- Socio-economic impact evaluation of energy kiosks projects and KIKI transmission line
- Organizational assessment of the national institution EWSA

5.4 “Budget versus curent (y – m)”

Budget vs Actuals (Year to Month, by Quarter) of RWA0705511

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Budget Version : **E07**

Year to month : 31/12/2012

Currency : **EUR**

YtM : **Report includes all closed transactions until the end date of the closed closing**

Status	Fin Mode	Amount	2012				Total	Total Exp.	Balance	% Exec		
			2011	Q1	Q2	Q3					Q4	
L'ÉNERGIE ÉLECTRIQUE		16.404.061,45	14.223.557,76	533.461,26	301.480,37	130.693,89	116.406,47	1.082.041,98	15.305.559,7	1.098.461,71	93%	
01 La production d'énergie		7.042.335,30	5.434.951,89	369.893,80	56.545,08	12.127,02	116.373,42	554.939,33	5.989.891,21	1.052.444,09	85%	
01	Construction de la MCH de	COGEST	1.375.152,00	925.176,04	12.117,70	51.487,33	404,04	73.751,96	137.761,03	1.062.937,07	312.214,93	77%
02	Etudes et suivi des travaux	COGEST	551.000,00	439.246,50	10.753,50			22.811,66	33.565,16	472.811,66	78.168,34	86%
03	Construction des MCH de	COGEST	3.410.162,47	2.700.282,76	326.642,74	3.223,27	3.462,04	2.155,01	337.483,06	3.037.765,82	372.396,65	89%
04	Etudes et suivi des travaux	COGEST	131.020,82	84.209,06	9.537,87	420,41	646,30	7.675,54	18.280,12	102.489,18	28.531,64	78%
05	Electrification des Centres	COGEST	1.375.000,00	1.290.010,48	23,23		7.614,64		7.637,87	1.297.648,35	77.351,65	94%
06	Installation pilote d'énergie	COGEST	200.000,00	16.266,59		1.414,07			1.414,07	17.680,66	162.319,34	9%
07	Suivi 3MCH	COGEST	0,01	-20.239,54	8.818,77			9.979,25	18.798,01	-1.441,53	1.441,54	-144153
02 L'accès à l'énergie		9.061.726,15	8.561.782,27	158.869,56	244.935,29	78.343,17	33,04	482.181,05	9.043.963,33	17.762,82	100%	
01	Etude et suivi des travaux	COGEST	347.605,00	89.964,88	50.153,34	111.347,75	78.343,17	33,04	239.877,30	329.842,18	17.762,82	95%
02	Construction de la ligne	COGEST	1.862.989,19	1.862.989,19						1.862.989,19	0,00	100%
03	Extension de la ligne MT	COGEST	2.183.697,96	2.183.697,96						2.183.697,96	0,00	100%
04	Construction de la ligne	COGEST	4.667.434,00	4.425.130,24	108.716,22	133.587,54			242.303,76	4.667.434,00	0,00	100%
03 Un appui institutionnel a été		300.000,00	226.823,60	4.697,90	40.223,70	40.223,70	40.223,70	44.921,60	271.745,20	28.254,80	91%	
01	Appui institutionnel aux	COGEST	300.000,00	226.823,60	4.697,90	40.223,70	40.223,70	44.921,60	271.745,20	28.254,80	91%	
RESERVE BUDGETAIRE		61.924,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	61.924,00	0%	
01 Budget Temp Excel Digestor		61.924,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	61.924,00	0%	
	REGIE	758.000,00	467.602,47	40.640,11	44.005,49	24.144,18	29.261,72	138.051,50	605.653,97	152.346,03	80,00	
	COGEST	16.774.659,00	14.440.106,84	551.406,60	307.324,01	155.176,77	139.180,20	1.153.087,59	?	1.181.464,57	93,00	
	TOTAL	17.532.659,00	14.907.709,31	592.046,71	351.329,50	179.320,95	168.441,92	1.291.139,09	?	1.333.810,60	92,00	



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	Status	Fin Mode	Amount	2012				Total	Total Exp.	Balance	% Exec	
				2011	Q1	Q2	Q3					Q4
01 Réserve Budgétaire		COGEST	61.924,00	0,00					0,00	61.924,00	0%	
02 Réserve Budgétaire REGIE		REGIE	0,00	0,00					0,00	0,00	7%	
MOYENS GLOBAUX			1.066.673,55	684.151,55	58.585,46	49.849,13	48.627,06	52.035,46	209.097,10	893.248,66	173.424,89	84%
01 Frais de personnel			765.300,00	483.893,36	45.989,69	42.475,62	33.565,92	39.060,05	161.091,29	644.984,67	120.315,33	84%
01 Assistant technique		REGIE	600.000,00	363.748,55	35.638,15	42.251,89	23.819,05	29.261,72	130.970,81	454.719,36	105.280,64	82%
02 Staf national		COGEST	132.000,00	97.975,55	8.185,61	-1.228,35	6.890,25	6.070,86	19.918,37	117.893,92	14.106,08	89%
03 Autres frais personnel		COGEST	33.300,00	22.169,28	2.165,93	1.452,09	2.656,62	3.727,47	10.202,11	32.371,39	928,61	97%
02 Investissements			73.097,44	53.057,80			431,64	212,43	644,07	53.701,87	19.395,57	73%
01 Véhicules		REGIE	55.000,00	37.392,00						37.392,00	17.608,00	68%
02 Equipement bureau et		COGEST	18.097,44	15.665,80			431,64	212,43	644,07	16.309,87	1.787,57	90%
03 Frais de fonctionnement			125.276,12	73.074,96	12.595,77	7.370,06	14.629,50	12.762,98	47.358,30	120.433,26	4.842,86	96%
01 Frais de fonctionnement		COGEST	86.796,11	50.685,59	3.241,27	8.623,23	10.746,02	8.447,81	31.058,33	81.743,92	5.052,19	94%
02 Télécommunications		COGEST	18.280,00	9.376,95	2.224,19	1.987,19	1.761,79	2.213,76	8.186,92	17.563,87	716,13	96%
03 Fournitures de bureau		COGEST	19.199,98	13.553,26	1.644,85	629,16	1.101,34	1.302,71	4.678,07	18.231,33	968,65	95%
04 TVA		COGEST	0,01	6.558,03	454,09	-5.645,73	666,95	777,52	-3.747,17	2.810,86	-2.810,85	281086 ----
05 Frais bancaires		COGEST	1.000,01	355,13	29,41	26,06	28,27	21,17	104,91	460,04	539,97	46%
06 Assistant Junior		REGIE	0,01	-7.454,00	5.001,96	1.750,15	325,13		7.077,24	-376,76	376,77	-376760 ---
04 Audit et suivi et évaluation			102.999,99	73.915,92		3,45			3,45	73.919,37	29.080,62	72%
		REGIE	758.000,00	467.602,47	40.640,11	44.005,49	24.144,18	29.261,72	138.051,50	605.653,97	152.346,03	80,00
		COGEST	16.774.659,00	14.440.106,84	551.406,80	307.324,01	155.176,77	139.180,20	1.153.087,59	?	1.181.464,57	93,00
		TOTAL	17.532.659,00	14.907.709,31	592.046,91	351.329,50	179.320,95	168.441,92	1.291.139,09	?	1.333.810,60	92,00



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				2011	Q1	Q2	Q3	Q4				
01 Suivi et backstopping		REGIE	47.999,99	34.219,71					34.219,71	13.760,28	71%	
02 Evaluation à mi-parcours		REGIE	25.000,00	26.580,92					26.580,92	-1.580,92	106%	
03 Audit		REGIE	30.000,00	13.115,29		3,45			3,45	13.118,74	16.881,26	44%
99 Conversion rate adjustment			0,00	209,49					209,49	-209,49	7%	
98 Conversion rate adjustment		REGIE	0,00	0,00					0,00	0,00	7%	
99 Conversion rate adjustment		COGEST	0,00	209,49					209,49	-209,49	7%	

REGIE	758.000,00	467.602,47	40.640,11	44.005,49	24.144,18	29.261,72	138.051,50	605.653,97	152.346,03	80,00
COGEST	16.774.659,00	14.440.106,84	551.406,60	307.324,01	155.176,77	139.180,20	1.153.087,59	?	1.181.464,57	93,00
TOTAL	17.532.659,00	14.907.709,31	592.046,71	351.329,50	179.320,95	168.441,92	1.291.139,09	?	1.333.810,60	92,00



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