

# **RESULTS REPORT 2014**

## **RENEWABLE ENERGY FOR RURAL DEVELOPMENT (MOZ 0901811& MOZ1002211)**



February 2015

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## Acronyms

ADB	African Development Bank
AFD	Agence Française de Développement
BTC	Belgian Technical Cooperation
CDM	Clean Development Mechanism
CEO	Chief Executing Officer
DGDC	Directorate for Development Cooperation
DIPREME	Direcção Provincial de Recursos Minerais e Energia
EdM	Electricidade de Moçambique
EIA	Environmental Impact Assessment
EU	European Union
FUNAE	Fundo de Energia
GIS	Geographical Information System
GIZ	Gesellschaft fuer Technische Zusammenarbeit
ICP	Indicative Cooperation Program
kW	kiloWatt
kWh	kiloWatt hour
kWp	kiloWatt peak
MDG	Millennium Development Goals
ME	Ministry of Energy
MZN	Mozambican Metical, about €0.027 (Jan 2015)
PARP	Plano de Acção para a Redução da Pobreza (=PRSP)
PPP	Public Private Partnership
R&D	Research and Development
RR	Resident Representative of BTC
SC	Steering Committee
SME	Small and Medium-sized Enterprises
TA	Technical Assistant
TFF	Technical and Financial File
UGEA	Unidade Gestora Executora des Aquisições (Procurement Unit at FUNAE)
WB	World Bank

## 1 Intervention at a glance

### 1.1 Intervention form

<b>Intervention title</b>	Renewable Energy for Rural Development (RERD)
<b>Intervention code</b>	MOZ 0901811 and MOZ1002211
<b>Location</b>	Mozambique
<b>Total budget</b>	€23.34m
<b>Partner Institution</b>	Fundo de Energia (FUNAE)
<b>Start Date Specific Agreement</b>	20 July 2010 / 28 Dec 2011
<b>Date intervention start /Opening steering committee</b>	14 September 2010
<b>Planned end date of execution period</b>	31 Dec 2015
<b>End Date Specific Agreement</b>	19 July 2015 / 28 December 2016
<b>Target groups</b>	Mozambicans in rural areas with no access to electricity in Manica, Sofala, Zambézia and Niassa Provinces
<b>Impact</b>	To promote rural development by providing access to energy
<b>Outcome</b>	To increase access to hydro, solar and wind energy for use in off-grid applications in rural areas
<b>Outputs</b>	1. Solar, wind and hydro systems in rural areas installed and operational.
	2. Increased access of rural households to renewable energy products.
	3. Technical and administrative capacity of FUNAE is increased.
<b>Year covered by the report</b>	2014

## 1.2 Budget execution

Description	Budget (€)	Expenditure				Balance (EUR)	Disbursement rate at the end of 2014
		Previous years		Year covered by report (2014)			
		2010-2013	Amount (EUR)	2014	Amount (EUR)		
<b>Total</b>	<b>23 340 000</b>		<b>6 316 086</b>		<b>5 899 320</b>	<b>11 124 595</b>	<b>52%</b>
<b>Output 1: Solar, wind and hydro systems in rural areas installed and operational</b>	<b>17 416 923</b>	2010	0	<b>2014</b>	<b>4 335 718</b>		
		2011	2 503 418				
		2012	267 928				
		2013	1 143 878				
<b>Subtotal - 1</b>	<b>17 416 923</b>		<b>3 915 224</b>		<b>4 335 718</b>	<b>9 165 981</b>	<b>47%</b>
<b>Output 2: Increased access of rural households to renewable energy products</b>	<b>874 677</b>	2010	0	<b>2014</b>	<b>25 399</b>		
		2011	811				
		2012	2 865				
		2013	3 443				
<b>Subtotal - 2</b>	<b>874 677</b>		<b>7 120</b>		<b>25 399</b>	<b>842 158</b>	<b>4%</b>
<b>Output 3: Technical and administrative capacity of FUNAE is increased</b>	<b>1 551 400</b>	2010	0	<b>2014</b>	<b>847 283</b>		
		2011	47 222				
		2012	114 836				
		2013	440 749				
<b>Subtotal - 3</b>	<b>1 551 400</b>		<b>602 807</b>		<b>847 283</b>	<b>101 310</b>	<b>93%</b>
<b>Output 4: General means (REGIE)</b>	<b>3 497 000</b>	2010	0	<b>2014</b>	<b>690 920</b>		
		2011	405 716				
		2012	726 420				
		2013	658 799				
<b>Subtotal - 4</b>	<b>3 497 000</b>		<b>1 790 935</b>		<b>690 920</b>	<b>1 015 146</b>	<b>71%</b>



## 1.3 Self-assessment performance

### 1.3.1 Relevance

	<b>Performance</b>
<b>Relevance</b>	B

*The project is relevant in that many people in the rural areas do not have access to energy. According to the Minister of Energy, Namburete, "in 2014 10.2 million people have electricity. 6.5 million obtain electricity from the national grid, while 3.7 million receive power from solar panels". The off-grid electrification provides energy for illumination, charging cell phones, power for computer / internet, radio, TV. To apply renewable energy for productive purposes, a solar system is not sufficient. The majority of rural households remain without access to electricity. The project still addresses a priority of the Government of Mozambique to provide more access to energy in the rural areas. The partner institution FUNAE formulated increase in access to electricity for rural areas as main objective in its new (Draft) Strategic Plan (2015 -2019). The project activities fit within the Government of Belgium development priorities by promoting the standard of living through rural development and the economic opportunities through providing clean power to Mozambicans.*

### 1.3.2 Effectiveness

	<b>Performance</b>
<b>Effectiveness</b>	B

*The intervention is expected to achieve the majority of the objectives, especially in terms of installed capacity of hydro power, solar power and people that benefit from renewable electricity services. The areas where less concrete outcomes will be achieved are renewable electricity access to private households as SPV electrification does not include individual houses or businesses and hydro power plants are still under construction. Despite all efforts by the project so far, promoting private sector investment into rural electrification proves to be difficult in the Mozambican context. The regulatory environment of the project is not conducive to private sector engagement, nor is there a clear joint vision to implement this part of the project. The market development study that has been commissioned for this purpose is has not presented concrete results yet.*

### 1.3.3 Efficiency

	<b>Performance</b>
<b>Efficiency</b>	B

*The activities in the project are mostly achieved at higher costs than initially foreseen due to high prices resulting from tender procedures. The project implemented corrective actions to reduce delays in payment for duties, taxes through the Mozambican Government system; however some outputs are still achieved later or at higher cost. The project manages most inputs fairly well, for example through the application of Belgian procurement law for short term consultancies. Some co-managed funds have been applied for pre-payment of taxes. A "Value for Money" Audit was conducted by end of 2014. The final report is expected in January 2015. Implementation of the recommendations will be part of the activities for 2015.*

### 1.3.4 Potential sustainability


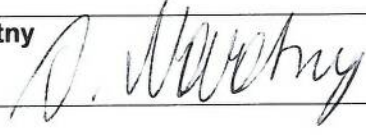
	<b>Performance</b>
<b>Potential sustainability</b>	B

*The sustainability of the intervention is mainly determined by how well the installations will be maintained. Partly FUNAE, partly Line Ministries, partly the beneficiaries will be responsible for this. Through investment in sense of ownership, end-user training, technician training and a maintenance contract for the first years, it is believed that sustainability will be increased. In addition, the project has contributed to setting up of a maintenance department at FUNAE, equipping teams of technicians at HQ and Delegations with material and tools. RERD also invests in a remote monitoring system for the larger solar systems which aims to reduce theft and vandalism as well as facilitate preventative maintenance.*

*All these interventions however cannot avoid that in 5-8 years the batteries of the solar systems and hydro-electric equipment will have to be replaced and maintenance of civil works will be required at significant cost, for which there are currently not enough financial provisions. The recent impact studies show that there is potential to improve the training of the end users to comply with basic maintenance tasks and report to FUNAE in case of problems. The (Draft) Strategic Plan of FUNAE for 2015 - 2019 aims to address these challenges with concrete activities to reduce this risk.*

## 1.4 Conclusions

- The project is progressing well in terms of capacity building and delivery of solar systems (85%) and solar water pumps; construction of hydro power sites has started and FUNAE delegations have been strengthened further.
- There is room for improvement on the results of the aspects of maintenance, training of end users, market development for pico-solar / pico-hydro and wind energy.
- The co-management structure modalities of the project have improved which lead to implementation progress with a disbursement rate of 52% and better communication between the partners.
- Measures taken to shorten long procurement process such as the application of Belgian procurement regulations, additional staff and pre-payment of taxes have proven to be successful.
- The violent tensions and extreme weather in the centre of Mozambique continued in 2014 and have led to additional costs and delays.
- The project provides a flexible way to address the main challenges of FUNAE, i.e. managing country-wide rural infrastructure, planning new investments and enhancing sustainability of installations.

RERD Project Manager	RERD Project Co- Manager
Mario Batsana 	Irene Novotny 



## 2 Results Monitoring

### 2.1 Evolution of the context

#### 2.1.1 General context

*During 2014, Mozambique is maintained an economic growth of 7%. There have been presidential elections in October, won by the Frelimo candidate Filipe Nyusi. Following a peace deal in September to end violent tensions between the two main parties mostly in the centre of the country including provinces where the project has activities, full implementation of the peace agreement has still to be followed closely.*

*Significant investment in energy infrastructure is continuing, due to Mozambique's natural resources potential i.e. natural gas, coal, large hydro power, the backbone electricity line from north to south. EDM, the main electricity utility aims at electrifying all district capitals by the end of 2015. However, the rural areas are still deprived from access to clean energy sources, which is the focus of FUNAE and the RERD project.*

#### 2.1.2 Institutional context

*During 2014, FUNAE has started operations of the solar panel assembling factory. This is a state-owned government facility managed by FUNAE which is intended to serve the upcoming local demand for solar modules. The Renewable Energy Atlas has been available on sale for interested stakeholders, identifying interesting opportunities in the area of wind energy, hydro power, solar, geothermal and biomass.*

*FUNAE works under the subordination of the Minister of Energy, as an implementation agency. In 2014 FUNAE has elaborated its new Strategic Plan for the period of 2015-2019. Main aspects are increasing the number of beneficiaries, maintaining a high level of quality of activities, strengthening the sustainability of the institution and looking for Private Sector engagement as well as guaranteeing proper maintenance of the existing investments.*

#### 2.1.3 Management context: execution modalities

*During 2014 the execution modality of co-management has improved following the implementation of the recommendations of the Mid-Term review in 2013. Actions to shorten the long procurement procedures by carrying out procurement for short term consultancies through REGIE modality have brought some gains. A Value for Money Audit was conducted in December 2014 with the report and recommendations being expected in the first quarter of 2015.*

*A donor mission took place in November of 2014, preparing the steps for the continuation of the Phase II of the RERD project starting 2016.*

#### 2.1.4 Harmo context

*During 2014, the Norwegian Embassy supported FUNAE through the contracting of consultants for a maintenance strategy and a private sector strategy. The RERD project provided input to the ToR of these studies. The action plan for implementation is being developed by FUNAE. Belgium is currently chairing the Energy Sector Donor Working Group. Relevant information on Renewable Energy subjects is being shared regularly with the project.*



## Performance outcome



## 2.1.5 Progress of indicators

Impact: Promote rural development providing access to renewable energy					
Indicators	Baseline value	Value year 2013	Value 2014	Target year 2015	End Target (2015)
Number of electrified schools with evening classes	0	0	0 <sup>1</sup>	120	120
Number of institutional births/month with access to quality illumination in electrified Health Centres	0	0	140 <sup>2</sup>	1500	1500
Number electrified infrastructures that use IT/AV appliances	0	60	200 <sup>3</sup>	500	500

Outcome: Increased access to hydro, solar, and wind energy for use in off grid applications in rural areas					
Indicators	Baseline value	Value year 2013	Value year 2014	Target year 2015	End Target (2015)
Number of beneficiaries	0	100.000	400 000	600 000	600 000
Beneficiary satisfaction (0-100%)	n/a	No data <sup>4</sup>	86% <sup>5</sup>	85%	85%
Total power installed (kW)	0	92	850 kW	1600 kW	1600 kW

## 2.1.6 Analysis of progress made

At the end of the year, 526 infrastructures (151 schools, 74 health centres, 233 residences, 68 administrative posts and localities) have been electrified with solar panels and handed over, after having passed the final quality check. Schools received also TV/ DVD and table lamps, health centres a vaccine fridge and lamps for examinations. Most schools also received a computer with a multifunctional printer/scanner.

The micro-hydro plant of Majaua (580kW) is operational since July and connections to households and public infrastructure have been made, the extension of the isolated mini grid will be finalised begin 2015.

The micro hydro plants of Muoha and Sembezeia are under construction.

## 2.1.7 Potential Impact

The envisaged outcome of the programme is: To increase access to hydro, solar and wind energy for use in off-grid applications in rural areas. This outcome will be achieved only partially, as some of the components lack institutional and legal framework and readiness of public institutions. Infrastructure projects have impact, but mainly after finalisation, so impact on promotion of rural development by providing access to energy can only be possible after

<sup>1</sup> None of the visited schools have introduced evening courses yet, as the electrifications took place during the on-going school year and planning and inscriptions start at the beginning of a new school year (2015)

<sup>2</sup> Based on 4 Health Centres as others visited have been in rehabilitation and not fully operational

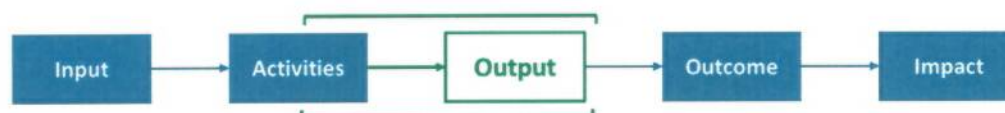
<sup>3</sup> Estimate based on number of schools and administrative buildings electrified and observations in the field

<sup>4</sup> Based on the short period of operation of the systems in 2013, and subsequently the small sample of beneficiaries interviewed, the satisfaction indicator was not sufficiently reliable.

<sup>5</sup> Based on 50 infrastructures with solar systems visited and that are operational for at least 12 months. Computer distribution for schools started in December 2014, therefore no data on impact yet.

*finalisation of the construction of micro hydro plants, photovoltaic installations and investments in basic energy infrastructure. The first impact assessments have been carried out for 50 infrastructures that have photovoltaic systems operational for at least 12 months. The main impact observed is improving communication and services through regular no cost cell phone charging. Better illumination increases quality of living and security of residents at night. Nevertheless, most schools have not yet introduced evening classes. Few electronic devices are available in the electrified infra structures or not used to full potential. Potential to improve is in maintenance, end user training and security of the systems to avoid theft and vandalism of components. It is also presumed that impact will increase through the project-supplied computer and multifunctional printer, which will be measured during the course of 2015.*

## 2.2 Performance output 1



### 2.2.1 Progress of indicators

Output 1: Hydro, solar and wind systems in rural areas installed and operational					
Indicators	Baseline value	Value 2013	Value year 2014	Target Year 2015	End Target 2015
Priority locations for solar systems are established	0	580	625	625	625
Number of total power of hydro power plants and solar systems installed, operational and properly maintained	0	PV: 92kWp Hydro: 0kW	PV: 255kWp Hydro: 595 <sup>6</sup> kW	PV: 300kWp Hydro 1200KW	PV: 300kWp Hydro 1200KW
Number of schools, health centres, administrative posts and residences electrified	0	188	526	625	625
Number of solar water pumps installed	0	0	0	80	80
Number of hybrid systems	0	0	0	1	1

### 2.2.2 Progress of main activities

Progress of <u>main</u> activities	Progress:			
	A	B	C	D
1 Needs assessment and feasibility studies		X		
2 Hydropower project implementation		X		
3 Solar power project implementation		X		
4 Wind power measurement			X	
5 Set up Maintenance Structure		X		

### 2.2.3 Analysis of progress made

During 2014, significant progress was achieved in the solar PV system implementation and as per end 2014 is at about 85% completion. The final systems to be accepted are mostly cases where FUNAE did not provide a provisional acceptance yet due to insufficient quality. About half of the schools electrified also obtained a computer and a multifunctional printer to increase impact.

During the final part of 2014, five wind masts were installed in small communities along the coast of Cabo Delgado, Nampula and Zambézia, and one in Niassa. These masts will collect wind potential data to determine the feasibility of wind/solar wind/diesel hybrid systems to power village minigrids.

The hydro power investments of the Majaua isolated grid extension, construction of micro hydro plants in Muoha and Sembezeia that started in 2014 are on-going with some delays. More feasibility studies for new sites are being executed and new construction tenders will be launched early 2015. Keeping in mind the recommendations of the Value for Money audit

<sup>6</sup> This number refers to the installed capacity of Majaua Hydro ; This system was rehabilitated with funds from the European Union and FUNAE, and part of the corresponding grid extension has been financed by the RERD project.



*discussions, the tenders of the Nintulo and Murralelo micro hydro plant have been cancelled because of extremely high prices.*

*To improve the functionality of the existing (solar) systems, a Maintenance unit has been established with additional staff at HQ and at the Delegations. Procurement of spare parts is under way and should be contracted in the beginning of 2015. Procurement of a remote monitoring system for 600 (larger) solar systems was finalised and will be implemented during the course of 2015.*

## 2.3 Performance output 2

### 2.3.1 Progress of indicators

Output 2: Increased access of rural households to renewable energy products					
Indicators	Baseline value	Value 2013	Value 2014	Target 2015	End Target 2015
Number of small solar products in rural shops/markets <sup>7</sup>	No data	No data	No data	No data	No data
Number of promotional activities for renewable energy products	0	0	0	2	2

### 2.3.2 Progress of main activities

Progress of <u>main</u> activities	Progress:			
	A	B	C	D
1 Marketing study			x	
2 Promotion of small solar products				x
3 Institutional support to FUNAE			x	
4 Financial support				x

### 2.3.3 Analysis of progress made

Following the recommendations of the MTR (2013), the focus of this component will be market development. However, the Legal Framework of Mozambique and internal regulations of the partner institution are considered limiting factors to fully engage in private sector development.

In July 2014 the project contracted the consulting company COWI to conduct a market analysis and mapping exercise for small renewable energy systems for households and small scale businesses for a period of 12 months. The aim is to identify the needs for market development and the latest developments in the Mozambican renewable energy market and present a plan of action to be implemented in a selected area. Options for market development tools can include financing options such as micro finance or subsidies for end users or actors in the supply chain as well as or grants and soft loans for the hydro component. Recommendations shall be made about the role of FUNAE, in what way the institution can support the development of the market and engage with the private sector and have a stronger focus on marketing activities for renewable energy products.

Progress of the consultancy is delayed due to capacity deficits and coordination difficulties within the consultancy team to deliver the expected results in quality and on time. The project is closely following up and discussion options on how to improve performance.

<sup>7</sup> The baseline and impact for this indicator is expected to be the outcome of the market study that commenced in 07/2014

## 2.4 Performance output 3

### 2.4.1 Progress of indicators

Output 3: Technical and administrative capacity of FUNAE is increased					
Indicators	Baseline value	Value 2013	Value 2014	Target 2015	End Target
Organisational capacity development plan	0	0	0	1	1
Number of trained people	0	85	40	n/a	n/a
Number of training / person days	0	568	1790 <sup>8</sup>	n/a	n/a
Number of documents for research projects	0	2	2	1	5
GIS- tool for planning and asset management in place	0	50%	60%	100%	100%

### 2.4.2 Progress of main activities

Progress of <u>main</u> activities	Progress:			
	A	B	C	D
1. Training	X			
2. Research & Development		X		
3. GIS-system		X		
4. Technical assistance	X			
5. Set-up of new delegations	X			

### 2.4.3 Analysis of progress made

The capacity building part of the RERD programme continues to be successful in providing a broad range of trainings, support to the GIS unit, working together with the Technical Assistants, and investments in new delegations of FUNAE.

Regarding **trainings**, the number of financing local post graduate trainings of FUNAE staff is increasing, providing more sustainability to the capacities acquired during these long term courses and has positive effect on the retention of qualified staff within the institution. Stronger focus on English languages courses has been proven to be necessary due to the internationalization of the working environment. There is good progress made towards the achievement of the output, as the capacity building activities are considered to lead to increased capacity of the partner organisation.

A consultancy was conducted to support the **GIS unit** end 2013. During the implementation of the Action Plan for 2014, increase in technical knowledge of the local staff has been identified, as the GIS unit grew from 3 to 5 members. It was decided to strengthen the unit with an expert on basis of a 12 months working contract. The consultant started working in December 2014.

Under the budget line "**Set up of new delegations**", the delegations have been strengthened with the acquisition of additional cars and continuation of a working budget for field visits. In order to improve the timely accountability of the delegations for these funds, a specific in house training with participation of the RERD administrator has been conducted in July 2014. There is still need for close follow up by FUNAE headquarter and the project administrator.

<sup>8</sup> Total number of training hours received by selected staff; includes 4 English language courses with a total of 64 hours / participant as well as courses abroad with an average of 45 hours / participant.



## 2.5 Transversal Themes

### 2.5.1 Gender

FUNAE continues to prepare annual gender activity plans and coordinate gender activities with the focal points of the divisions as well as with other public institutions.

For the baseline and impact studies, gender disaggregated data is included in the questionnaires wherever feasible.

### 2.5.2 Environment

FUNAE is conducting Environmental Assessments for infrastructures to be built.

The installation of PV systems for public infrastructure and staff houses are expected to lead to a decrease in the use of batteries and kerosene as energy sources, thus producing less toxic waste and reduce the use of fossil energy sources.

Impact of hydro plants on environment will be limited as there will be no dams retaining water, only overflowing walls to lift the water. For any other impact, Environmental Impact Assessments are performed for every individual micro hydro plant.

FUNAE is certified ISO 14001/2004 thus following the requirements for implementing an environmental management system.

### 2.5.3 Other

#### **HIV Aids**

There is no discrimination within the activities regarding people with HIV/AIDS. FUNAE has a HIV / Aids focal point. Regular meetings for awareness rising are organized within the partner organisation. The International Aids Day is commemorated within the institution through open discussions. Condoms are available at no cost to the staff.

## 2.6 Risk management

Risk Identification		Risk analysis			Risk Treatment			Follow-up of risk			
Description of Risk	Period of identification	Risk category	Probability	Potential Impact	Total	Action(s)	Resp.	Deadline	Progress	Status	
Theft of solar system components (solar panels)	2015	OPS	Medium	Medium	Medium Risk	Awareness raising and involving local community, use anti-theft material, monitoring system	FUNAE / BTC	before finalisation of installation	Training of beneficiaries, use of anti-theft material part of checklist for provisional acceptance	OK	
Budget execution risk, foreseen sites for further hydro development are not suitable or socio-economically not viable		FIN	Low	Medium	Low Risk	Identify more sites than needed for budget execution in order to have a better choice on site development	FUNAE / BTC	ongoing	Sufficient hydro power sites have been identified in 2014	OK	
Low Value for Money of bids requires retendering and further delays		FIN	Medium	Medium	Medium Risk	Improve specifications of tender documents and publish tender in English to receive higher number of bids	FUNAE / BTC	ongoing	Value for money audit being prepared for 2014, tenders published in English	OK	
Natural occurrences (heavy rains, floods) and difficult access due to bad roads delay the execution of infrastructure projects		OPS	Medium	Medium	Medium risk	Consideration of risks in planning process and inclusion of clause of risk sharing in contracts and/or insurance	FUNAE / BTC	throughout the project period	throughout the project period	Planning of activities assume some delay in the rainy season	OK
Improper use of components in solar/hydro systems											
Fluctuation of key staff at partner institution		JUR	Low	High	Medium Risk	Training and leaflets in local language, monitoring visits Good documentation of project progress to ease new staff to familiarize with the project Every tender requires authorization by the Ministry of Finance and "Tribunal Administrativo"; the local partner is experienced in the procedures of tenders ;	FUNAE / BTC	throughout the project period	throughout the project period	New incentive scheme being considered by partner organisation Most tenders turn out to be legally acceptable but the process is relatively long. Discussion between BTC and partner organisation continues.	OK
Procurement rules and procedures according to national legislation are not applied correctly.											
Technical problems and delays affect image of partner negatively		REP	Low	Low	Low Risk	Regular quality surveys and sensitization campaigns	FUNAE / BTC	throughout the project period	throughout the project period	Implementation in the province of Sofala is significantly delayed, some installation cannot be carried out and for these, alternatives are being sought; TAs do not travel to Sofala during negative travel advice, FUNAE selects 'safe' districts within Sofala to advance the work	OK
Political Risk / Security: Political instability, especially in the middle of the country might worsen, affecting security and therefore negatively affect progress		DEV	High	Medium	High Risk	Monitor closely information available about armed attacks in the project area.	FUNAE / BTC	throughout the project period	throughout the project period		OK

### 3 Steering and Learning

#### 3.1 Strategic re-orientations

From the Mid-term review recommendations as well as the discussions during the preparation for the Terms of References for the “Value for Money Audit” the project had to learn and ascertain that some difficulties or challenges cannot be solved just by the Project Management Team, as was presumed. There is also a lack of qualified local experts and consulting companies, as demonstrated the still pending contracting of a local Private Sector expert and the delays and not satisfying results of the market development study so far.

The project introduced the modality of pre-payment of taxes in order to increase implementation; however this is not to be considered a long term solution.

There is lower impact on SPV electrification on public infra structures as initially expected. The preparation of the second phase of the Project has to look into these aspects.

#### 3.2 Recommendations

Recommendations of Results Report 2013	Actor	Deadline
<i>Future consultancy work with an estimated value lower than €85,000 will be contracted by BTC under Belgian Law, using the “negotiated procedure”.</i>	BTC/FUNAE	Completed
<i>Consider (pre-) payment by the project of local taxes to avoid delays in implementation and payment through a reserved budget line in the administration of the project.</i>	BTC/FUNAE	Completed
<i>Train TAs in Belgian Procurement Law.</i>	BTC HQ	Completed
<i>Hire a PPP expert with knowledge about the Mozambican procurement law and PPP law to investigate new PPP opportunities for FUNAE.</i>	BTC/FUNAE	Delayed
<i>Hire a Procurement expert / Time Keeper (full time) with experience of Mozambican and Belgium procurement laws.</i>	BTC/FUNAE	Completed

Recommendations 2014	Actor	Deadline
<i>Repayment of taxes by FUNAE that have been pre-paid by the project has to be assured.</i>	BTC/FUNAE	End of each quarter
<i>Action Plan of Value for Money Audit recommendations</i>	BTC/FUNAE	March 2015
<i>Hire a PPP expert with knowledge about the Mozambican procurement law and PPP law to investigate new PPP opportunities for FUNAE</i>	BTC/FUNAE	April 2015
<i>Assure smooth transition of RERD II project</i>	BTC HQ	July 2015



### 3.3 Lessons Learned

Lessons learned	Target audience
<i>A smooth transfer between RERD-I and RERD-II requires early action for the identification and formulation processes to run their course</i>	BTC HQ
<i>Pre-payment of taxes on co-managed expenses facilitates payment and fastens implementation, however during 2014 it was re-confirmed that taxes are not eligible RERD project costs and therefore need to be recovered from the partner FUNAE</i>	BTC / FUNAE
<i>Some studies and preparation works like clearing access roads with the local authorities and population have been implemented in regie modality, and resulted in faster results.</i>	BTC / FUNAE
<i>Financial/Economic strengthening at the BTC Representation has assisted in smooth facilitation of various budgetary issues and the implementation of the Value for Money audit.</i>	BTC HQ
<i>Financial and procurement capacity contracted by the project greatly facilitates implementation and should have been considered earlier during the project implementation</i>	BTC

## 4 Annexes

### 4.1 Quality criteria

<b>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</b>				
<i>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</i>				
<b>Assessment RELEVANCE: total score</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
		X		
<b>1.1 What is the present level of relevance of the intervention?</b>				
	<b>A</b>	Clearly still embedded in national policies and Belgian strategy, responds to aid effectiveness commitments, highly relevant to needs of target group.		
X	<b>B</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.		
	<b>C</b>	Some issues regarding consistency with national policies and Belgian strategy, aid effectiveness or relevance.		
	<b>D</b>	Contradictions with national policies and Belgian strategy, aid efficiency commitments; relevance to needs is questionable. Major adaptations needed.		
<b>1.2 As presently designed, is the intervention logic still holding true?</b>				
	<b>A</b>	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).		
X	<b>B</b>	Adequate intervention logic although it might need some improvements regarding hierarchy of objectives, indicators, Risk and Assumptions.		
	<b>C</b>	Problems with intervention logic may affect performance of intervention and capacity to monitor and evaluate progress; improvements necessary.		
	<b>D</b>	Intervention logic is faulty and requires major revision for the intervention to have a chance of success.		
<b>2. EFFECTIVENESS TO DATE: Degree to which the outcome (Specific Objective) is achieved as planned at the end of year N</b>				
<i>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</i>				
<b>Assessment EFFECTIVENESS : total score</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
		X		
<b>2.1 As presently implemented what is the likelihood of the outcome to be achieved?</b>				
	<b>A</b>	Full achievement of the outcome is likely in terms of quality and coverage. Negative effects (if any) have been mitigated.		
X	<b>B</b>	Outcome will be achieved with minor limitations; negative effects (if any) have not caused much harm.		
	<b>C</b>	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.		
	<b>D</b>	The intervention will not achieve its outcome unless major, fundamental measures are taken.		



<b>2.2 Are activities and outputs adapted (when needed), in order to achieve the outcome?</b>	
	<b>A</b> 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>B</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.
	<b>C</b> 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.
	<b>D</b> The intervention has failed to respond to changing external conditions, risks were insufficiently managed. Major changes are needed to attain the outcome.

<b>3. 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</b>				
<i>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</i>				
Assessment EFFICIENCY : total score	A	B	C	D
		X		
<b>3.1 How well are inputs (financial, HR, goods &amp; equipment) managed?</b>				
	<b>A</b> All inputs are available on time and within budget.			
X	<b>B</b> Most inputs are available in reasonable time and do not require substantial budget adjustments. However there is room for improvement.			
	<b>C</b> Availability and usage of inputs face problems, which need to be addressed; otherwise results may be at risk.			
	<b>D</b> Availability and management of inputs have serious deficiencies, which threaten the achievement of results. Substantial change is needed.			
<b>3.2 How well is the implementation of activities managed?</b>				
	<b>A</b> Activities implemented on schedule			
X	<b>B</b> Most activities are on schedule. Delays exist, but do not harm the delivery of outputs			
	<b>C</b> Activities are delayed. Corrections are necessary to deliver without too much delay.			
	<b>D</b> Serious delay. Outputs will not be delivered unless major changes in planning.			
<b>3.3 How well are outputs achieved?</b>				
	<b>A</b> All outputs have been and most likely will be delivered as scheduled with good quality contributing to outcomes as planned.			
X	<b>B</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.			
	<b>C</b> Some output are/will be not delivered on time or with good quality. Adjustments are necessary.			
	<b>D</b> 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.			



<b>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).</b>				
<i>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</i>				
Assessment POTENTIAL SUSTAINABILITY : total score	A	B	C	D
		X		
<b>4.1 Financial/economic viability?</b>				
	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.		
<b>4.2 What is the level of ownership of the intervention by target groups and will it continue after the end of external support?</b>				
	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.		
X	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. Likelihood 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.		
<b>4.3 What is the level of policy support provided and the degree of interaction between intervention and policy level?</b>				
	A	Policy and institutions have been highly supportive of intervention and will continue to be so.		
X	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.		
<b>4.4 How well is the intervention contributing to institutional and management capacity?</b>				
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

Provide an overview of the important strategic decisions taken by the steering committee and the follow-up of those decisions.

Decision to take	Action	Resp.	Deadline	Follow-up	
				Progress	Status
Extension of project until Dec 2015	Minutes of SC	BTC/DGD	asap	Minutes of SC sent to BTC	Done
	Approval by BTC HQ/DGD	DGD	asap	Request sent to BTC	
	Request to extend TA contracts	BTC	asap	SC 6/2014 approved	
Modification of Logical Framework Results and Adaptation of Project Budget Lines (following MTR recommendations and project extension) Stronger focus on Maintenance of Solar systems	Modification needs adjustment of indicators	PMT	08/2013		Done
	Approval of adjusted Log frame by next SC	SC	06/2014		Done
	Modify Budget lines in FIT	LAF/BTC HQ	08/2013	done	Done
	Creating Maintenance unit	FUNAE	09/2013		Done
	Maintenance Strategy	FUNAE	12/2013		Done
	Training of Maintenance unit	FUNAE	12/2015	Continuous trainings	On-going
	Agree on improved internal Procedures	FUNAE	12/2013	Proposal presented to BTC Res Rep	Done
	Hire external procurement expert	BTC	09/2014		Done
	Increase of use of B procurement for short consultancy	BTC	01/2014	First consultancies already published	Done
	Regular PMT meetings	PMT	ongoing	PMT meetings can now be called by Project Director	implemented
Improvement of Project Management Structure according to TFF					
Extension of project until Dec 2016 according to Donor mission decision of 11/2014 to guarantee smooth transition for RERD II	Minutes of meeting and official letters	BTC/DGD	asap		On-going



### 4.3 Updated Logical framework

<i>Intervention logic</i>	<i>Indicators</i>	<i>Means of Verification</i>	<i>Risks and assumptions</i>
<b>Global Objective:</b> To promote rural development by providing access to energy	<ul style="list-style-type: none"> <li>- Number of electrified schools that have evening classes</li> <li>- Number of institutional births</li> <li>- Use of IT /AV in electrified infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>- Surveys from line ministries</li> <li>- Baseline Survey</li> <li>- FUNAE monitoring system</li> </ul>	Energy systems are used as intended
<b>Specific Project Objective:</b> To increase access to hydro, solar and wind energy for use in off-grid applications in rural areas	<ul style="list-style-type: none"> <li>- Number of beneficiaries</li> <li>- Beneficiary satisfaction</li> <li>- Total power installed</li> </ul>	<ul style="list-style-type: none"> <li>- Surveys/impact evaluations</li> <li>- Project reports</li> <li>- GIS data base</li> </ul>	Systems are well designed and installed Projects are implemented on time and on budget
<b>Intermediate Result 1:</b> Solar, wind and hydro systems in rural areas installed and operational	<ul style="list-style-type: none"> <li>- Priority locations for solar systems are established</li> <li>- Number of renewable energy systems installed, operational and properly maintained</li> <li>- Number of schools, hospitals and public administration buildings and residences electrified</li> <li>- Number of SPV water pumps installed</li> </ul>	<ul style="list-style-type: none"> <li>- Data base of planning division</li> <li>- Project reports</li> <li>- Surveys</li> <li>- GIS data base</li> </ul>	Access to sites does not deteriorate Proper maintenance by ministries
<i>For activities:</i>			
<i>Actors</i>			
<b>Activity 1.1:</b> Needs assessment and feasibility studies	Consultancy, Min Education, Min Health, Min Energy	€1.300.000	Quality consultants available
<b>Activity 1.2:</b> Hydropower project implementation	Consultancy (supervision), Construction Companies, ARA	€5.400.000	Functional management modality available. Viable sites are found.
<b>Activity 1.3:</b> Solar power project implementation	Consultancy (supervision), Companies, Min Education, Min Health	€9.300.000	Proper maintenance by ministries
<b>Activity 1.4:</b> Wind power	Consultancy (supervision), Companies	€500.000	Use of small scale wind is viable
<b>Activity 1.5:</b> Set up Maintenance Structure	Min Education, Min Health, Min State Administration, Companies, FUNAE delegations	€1.100.000	Institutions benefitting from systems show commitment (in actions) to ensure maintenance.



<i>Intervention logic</i>	<i>Indicators</i>	<i>Means of Verification</i>	<i>Risks and assumptions</i>
<b>Result 2:</b> Increased access of rural households to renewable energy products	<ul style="list-style-type: none"> <li>- Number of small solar products in rural shops/markets</li> <li>- Number of promotional activities for renewable energy products</li> <li>- Number of inquiries through "Linha Verde"</li> </ul>	Survey	Private companies/ suppliers and FUN.AE agree on smooth cooperation model; Role of FUN.AE for Private Sector Support defined
<i>For activities:</i>			
<i>Actors</i>			
<b>Activity 2.1:</b> Marketing study	Consultant	€200.000	Quality consultant available
<b>Activity 2.2:</b> Promotion of small solar products	Media, FUN.AE, consultant, marketing companies, radio, etc.	€200.000	Rural marketing infrastructure available
<b>Activity 2.3:</b> Institutional support to FUN.AE	Consultant	€200.000	Quality consultants available
<b>Activity 2.4:</b> Financial support	Private companies	€300.000	Private companies willing to cooperate with FUN.AE
<b>Result 3:</b> Technical and administrative capacity of FUN.AE is increased	<ul style="list-style-type: none"> <li>- Organisational capacity development plan</li> <li>- Number of trained people</li> <li>- Number of training person days</li> <li>- Number of document research projects</li> <li>- GIS- tool for planning and asset management in place</li> </ul>	<ul style="list-style-type: none"> <li>- Reports,</li> <li>- Audits,</li> <li>- GIS asset management system</li> </ul>	<ul style="list-style-type: none"> <li>TAs are provided with sufficient space to contribute to organisational capacity building.</li> <li>Trained people stay at FUN.AE (no brain-drain)</li> </ul>
<i>For activities:</i>			
<i>Actors</i>			
<b>Activity 3.1:</b> Training	FUN.AE staff	500.000 €	
<b>Activity 3.2:</b> R&D	FUN.AE	200.000 €	
<b>Activity 3.3:</b> GIS-system	Consultancy, software provider, GPS suppliers	300.000 €	
<b>Activity 3.4:</b> Technical assistance	BTC	2.375.000 €	
<b>Activity 3.5:</b> Set-up of new delegations	FUN.AE	500.000 €	
<i>Risks and assumption</i>			

The logical framework underwent some changes with regard to updated indicators that were more relevant to measure the impact.

#### 4.4 More Results at a glance

Logical framework's results or indicators modified in last 12 months?	<i>Yes, some minor changes to the indicators were made.</i>
Baseline Report registered on PIT?	Yes
Planning MTR (registration of report)	MTR carried out in Q1 2013
Planning ETR (registration of report)	09/2015 (estimate)
Backstopping missions	12/2011, 11/2013, 03/2014,

06 Bank charges	COGES	148 000,00	3 037,07	<b>2 287,06</b>	5 324,93	142 675,07	4%
07 Local VAT pre payment	COGES	0,00	69 612,64	<b>467 929,27</b>	537 541,91	-537 541,91	7%
08 Retention tax pre payment	COGES	0,00	0,00	<b>0,00</b>	0,00	0,00	7%
<b>04 Audits, Follow-up and Evaluations</b>		<b>320 000,00</b>	<b>102 896,00</b>	<b>42 624,46</b>	<b>145 520,45</b>	<b>174 479,55</b>	<b>46%</b>
01 Audit	REGIE	80 000,00	33 504,23	<b>2 889,09</b>	36 394,22	43 605,78	45%
02 Internal control and risks assessment	REGIE	70 000,00	9 459,37	<b>38 089,08</b>	45 547,95	24 452,05	65%
03 Mid term and Final evaluation	REGIE	120 000,00	56 041,92	<b>0,00</b>	56 041,92	63 958,08	47%
04 Baseline study	REGIE	20 000,00	2 145,27	<b>0,00</b>	2 145,27	17 854,73	11%
05 Follow-up and backstopping	REGIE	30 000,00	1 746,21	<b>3 644,08</b>	5 391,09	24 608,91	18%
<b>99 Conversion rate adjustment</b>		<b>0,00</b>	<b>213,69</b>	<b>0,00</b>	<b>213,69</b>	<b>-213,69</b>	<b>7%</b>
98 Conversion rate adjustment	REGIE	0,00	213,69	<b>0,00</b>	213,69	-213,69	7%
99 Conversion rate adjustment	COGES	0,00	0,00	<b>0,00</b>	0,00	0,00	7%
		REGIE	3 886 000,00	1 570 990,81	<b>600 919,74</b>	2 261 860,55	61%
		COGEST	19 652 000,00	4 631 543,91	<b>5 321 990,85</b>	9 953 524,76	51%
		TOTAL	23 340 000,00	6 202 504,72	<b>6 012 900,60</b>	12 215 405,31	52%

## Communication resources