

E ELECTRICITY ENERGY SELF-SUFFICIENCY AMIDST CLIMATE CHANGE

E.1 Introduction

E.1.1 Overarching goal

Following the ARER report on “Electricity Energy self-sufficiency strategy for Rodrigues, security supply, Sustainable Development and Climate Change 100% Renewable energy”, the overarching goal of the SIPDR for the energy sector is to adapt to climate change and ensure energy security for Rodrigues by working towards self-sufficiency in electricity energy by 2025.

E.1.2 Strategies and goals

The following strategies and goals have been formulated in order to achieve the overarching goal:

- 1 Energy security supply;
- 2 Exploiting the potential of the wind energy;
- 3 Leverage biomass as a major source of energy and a major area for Rodrigues to adapt to climate change;
- 4 Increasing the solar energy penetration;
- 5 Energy management and disaster preparedness; and
- 6 Develop partnerships with islands of the Indian Ocean.

E.1.2.1 Proposed action plan

The proposed plan provides details about the different activities that have to be performed to achieve each strategy or goal.

Goals

[Please see next page]

LOGICAL FRAMEWORK TO SECURE ENERGY SUPPLY IN RODRIGUES AND ADAPT TO CLIMATE CHANGE.

E.1.2.2 Goal 1

ACTIVITY DESCRIPTION	INDICATORS OF ACHIEVEMENT	M & E	RISKS
Goal 1: Energy security supply			
<p>Project Development Objective</p> <p>1. Develop small hydraulic systems on different sites</p>	<p>1.1 Sites for hydraulic systems are chosen.</p> <p>1.2 Detailed map with hydraulic systems is available.</p>	<p>Feasibility study is carried out and published.</p>	<p>Cost of feasibility studies and implementation.</p>
<p>Activities</p> <p>1.1 Evaluate the potential of exploiting energy from swell (Wave Energy Converter)</p> <p>1.2 Economic and financial feasibility studies to be carried out by an Australian company which has been approached by ARER regarding the installations of hydro turbines in the large pass of Port Sud Est.</p> <p>1.3 Evaluation of the Thermal energy sector be carried out by the Mauritius Research Council including a feasibility study for an Ocean Thermal Energy Conversion (OTEC) Power Plant</p>	<p>Output Indicators</p> <p>1.1.1 Evaluation of the potential is mapped out.</p> <p>1.2.1 The output of the feasibility study is compatible</p> <p>1.3.1 Results of the evaluation report</p>	<p>Evaluation report</p> <p>Feasibility report by the Australian Company</p> <p>Evaluation report</p> <p>Feasibility report</p>	<p>Not compatible with Megapteras whales visiting the north of Rodrigues.</p> <p>Cost of the feasibility study of the thermal energy sector</p> <p>Lack of expertise to carry out the study</p>

E.1.2.3 Goal 2

ACTIVITY DESCRIPTION	INDICATORS OF ACHIEVEMENT	M & E	RISKS
Goal 2: Exploiting the potential of the wind energy			
Project Development Objective			
1. Establish an atlas of wind sources	1.1 An atlas of wind sources is available by mid-2010	Commission of public infrastructure and others	Lack of technical expertise to produce the atlas.
Activities			
<p>1.1 Development of an atlas of wind sources with suitable sites which are far from houses and also comprises of technical links to the CEB network and/or to the hydraulic stations of stocks of intermittent energy.</p> <p>1.2 Installation of wind turbines (of 220 kW) at Grenade</p>	<p>Output Indicators</p> <p>1.1.1 The Atlas provides suitable sites of wind sources as well as links to the CEB networks.</p> <p>1.2.1 First wind turbine is installed in 2010</p> <p>1.2.2 Ten wind turbines are installed by 2020</p>	<p>Publication of atlas</p> <p>Energy reports</p>	<p>Lack of information</p> <p>Cost of implementations</p> <p>Environment Impact Assessment reports</p> <p>Noise pollution</p>

E.1.2.4 Goal 3

ACTIVITY DESCRIPTION	INDICATORS OF ACHIEVEMENT	M & E	RISKS
Goal 3: Leverage biomass as a major source of energy and a major area for Rodrigues to adapt to climate change			
Project Development Objective			
1. Rodrigues adapts to climate change	1.1 There is a reduction greenhouse gas emissions	Environment reports	Natural calamities, cyclones, Tsunamis, droughts, etc
Activities			
1.1 Reforestation of land 1.2 Plantation of coconut trees on the coast of the island 1.3 Develop a multi functioning ecological sector 1.4 Establish forest village 1.5 To invest in a unit of gasification of biomass 1.6 Reinstate the waste depot at Roche Bon Dieu 1.7 To set up an industrial zone at Grenade	Output Indicators 1.1.1 4,500 to 5,500 of forest land by 2015 1.2.1 10,000 coconut trees are planted by 2015 1.3.1 All 11,000 houses are included in the project. 1.4.1 90 forest villages are established by 2015 1.5.1 Rodrigues is self sufficient in electrical and heat energy in the very long term 1.6.1 The depot at Roche Bon Dieu is reinstated 1.7.1 The industrial zone at Grenade is operational by 2010	Reports from the commission of environment Publication of project documents for implantation Project document for implementation of a unit of gasification of biomass Environment Impact Assessment for waste depot at Roche Bon Dieu. Environment Impact Assessment for industrial zone at Grenade	Incompatibility of project document with Rodrigues environment Availability of donors and sponsors for the various projects.

E.1.2.5 Goal 4

ACTIVITY DESCRIPTION	INDICATORS OF ACHIEVEMENT	M & E	RISKS
Goal 4: Increasing the solar energy penetration			
<p>Project Development Objective</p> <p>1. Make solar energy exploitable by all Rodriguans</p>	<p>1.1 All Rodriguans use solar water for their uses.</p>	<p>Sales of solar water heaters</p>	<p>Purchasing power of Rodriguans</p>
<p>Activities</p> <p>1.1 To undertake a detailed study of solar water heater for hospitals, schools, scattered houses and types of buildings</p> <p>1.2 A survey study to be carried out on the income and/or revenue of households in Rodrigues</p> <p>1.3 Sensitisation campaigns about solar energy</p> <p>1.4 An equipment programme for photovoltaic supply of building energy autonomy is proposed.</p>	<p>Output Indicators</p> <p>1.1.1 The compatibility of the installation of solar water heater with such buildings is determined</p> <p>1.2.1 The ability to purchase solar water heaters is revealed</p> <p>1.3.1 People are aware about the savings that solar water heater can bring. An increase in the sales of solar water heater.</p> <p>1.4.1 A feasibility study for the photovoltaic sector is carried out</p>	<p>Feasibility study report</p> <p>Results of surveys carried out</p> <p>Reports from association of consumers</p> <p>Figures from CEB</p> <p>Electricity invoices of households</p> <p>Feasibility study reports</p>	<p>Studies reveal that architecture of buildings are incompatible with the installation of solar water heaters</p> <p>Lack of funds to implement the project of photovoltaic system</p>

E.1.2.6 Goal 5

ACTIVITY DESCRIPTION	INDICATORS OF ACHIEVEMENT	M & E	RISKS
Goal 5: Energy management and disaster preparedness			
Project Development Objective			
1. Reducing the cost of electricity bills	1.1 Electricity bills are reduced by 20% by 2009	Central Electricity Board	Willingness of the population to save energy.
Activities			
1.1 Energy distribution campaign 1.2 Awareness campaigns with respect to energy saving 1.3 Introduction of a 'Mr/Mrs Energy Saving' 1.4 Current hotels, tables d'hotels and gites are subject to systematic audit 1.5 Buildings (Hospitals, cold rooms, etc) with potentially high electricity consumption must be subject to a study	Output Indicators 1.1.1 44,000 low energy bulbs are distributed to Rodriguans by RRA and CEB 1.2.1 School activities and curriculum includes an important component on energy. 1.2.2 Energy saving campaigns are organised through the Radio 1.3.1 The RRA sets the example by compelling all commissions to adopt strict energy saving attitudes by end 2009 1.4.1 Their respective electricity bills are reduced by 20% by end 2010 1.5.1 There is a significant fall in their respective electricity bills (by 20%) by end 2010	Manufacturer and supplier of low energy bulbs A new school curriculum is defined where energy components forms part of the school activities Media announcements and publications Official electricity invoices Figures from CEB	Cost of supplying 44,000 energy bulbs. Collaboration among all players (RRA, CEB, radio, schools)

E.1.2.7 Goal 6

ACTIVITY DESCRIPTION	INDICATORS OF ACHIEVEMENT	M & E	RISKS
Goal 6: Develop partnerships with islands of the Indian Ocean			
<p>Project Development Objective</p> <p>1. Develop an ambitious regional policy by joining all islands in the Indian Ocean for a common action plan</p>	<p>1.1 A regional platform is set up regrouping all islands at regional level.</p> <p>1.2 Technical Expertise and knowledge are shared and obtained among regional islands.</p>	<p>Official treaties signed</p>	<p>Diplomatic procedures</p> <p>Proper coordination among representatives of islands.</p>
<p>Activities</p> <p>1.1 Set up of a regional platform to regroup all islands.</p> <p>1.2 Organise bilateral agreements of cooperation</p> <p>1.3 Technical and financial aid are obtained from other islands</p>	<p>Output Indicators</p> <p>1.1.1 The regional platform is operational</p> <p>1.1.2 The ONERC and the IOC in the Indian Ocean are mobilised</p> <p>1.2.1 Number of agreements signed</p> <p>1.2.2 Number of projects implemented through bilateral cooperation.</p> <p>1.3.1 Rodrigues benefits from the technical expertise in exploiting solar, wind, hydro, ocean swell energies for the generation of electricity.</p>	<p>Records of agreements signed</p> <p>Records of the minutes of meetings</p> <p>Project Documents are published</p>	<p>Lack of expertise</p> <p>Lack of funds to implement the different projects.</p> <p>Feasibility studies of the different projects reveal incompatibility with Rodrigues landscapes and climatic environment.</p>