

reasonable cost, and a medium-term goal of a 50% contribution of renewable energy to the national energy demand. The goal of 50% of energy demand being met by renewable energy sources will be difficult to achieve, as it would require a huge investment in renewable energy technologies and upgrading of the national electricity grid, a dramatic decrease in energy consumption, and sweeping changes to land tenure legislation.

The Government of Nauru also adopted a reform strategy in 2007 for its utilities sector. This reform strategy highlights amongst other aspects the need for more transparency, better cost-recovery, improved supply-side and demand-side management and increases share of renewable energy. The Government endorsed the Nauru Energy Policy Framework (NEPF) in 2008, which sets out goals for renewable energy targets (10% by 2020) and puts in place policies that aim at reducing fuel consumption by the utility (whether through supply-side efficiency or demand-side management), as well as reducing the cost of electricity and improving the reliability of electricity supply.

Preliminary assessments have shown that energy efficiency activities on the supply side will result more cost effective than additional installation of renewable energy equipments, which nevertheless will be considered in the future. Furthermore, upgrading the generation and distribution infrastructure up to international standards will generate more energy saving and thus reduction of CO₂ emission than installing new renewable energy systems for a comparable financial envelope.

2.2. Lessons learnt

In 2005 the Asian Development Bank (ADB) commissioned a study of the utilities sector in Nauru. It warns of problems associated with land tenure, and that a backlog of cases in courts may result in land disputes not being settled in a reasonable timeframe. It also notes that much of the equipment on the distribution system is almost 50 years old.

In 2004 the Pacific Islands Renewable Energy Project (PIREP) issued a report on the status and future potential of renewable in Nauru. It concluded that the only practical but limited forms of renewable energy for the foreseeable future are solar PV and wind, and that there are gains to be had by reducing the power generation and distribution losses at the utility. The report warns of land tenure problems when implementing projects.

In November 2008, A Result-Oriented-Monitoring mission was sent to Nauru to assess the progress of the REP-5 activities. The consultant concluded that demand-side energy reduction alone will not be sufficient in reducing fuel consumption at the utility without an improvement of the power supply as well.

The two largest donors to Nauru, notably AusAID and Taiwan, provide funds to the Government of Nauru via national budget. What specific commitments they have had to the electricity sector have been limited in large part to the power station, as the restoration of 24-hour power to the island is the NUA's current priority. Funds have also been used to repair parts of the distribution grid, but these have been on an as-needs basis as equipment failed.

2.3. Complementary actions

The REP-5 programme is providing Euros 1,799,000 for renewable energy and demand-side energy efficiency actions. It installed grid-connected PV system on the roof of Nauru College, and purchased prepayment electricity meters that will be installed on all homes and businesses by August 2009. REP-5 has also assisted the NUA in setting up an energy efficiency awareness campaign and energy efficiency action plan, and will be funding an awareness campaign until the end of 2009. The REP-5 programme ends on December 31st, 2009. Under EDF-10, the EC is funding the Technical Cooperation Facility (TCF), in the amount of Euros 200,000. The TCF will primarily fund the cost of technical assistance and training and capacity building of the office of the National Authorising Officer (NAO). Australia and Taiwan are the biggest donors of overseas aid to Nauru. In 2007-2008, they provided AUD 8.93 in direct budget support. Some of those funds are earmarked for specific expenses, such as hiring expatriate staff in the government, funding capital works and equipment purchases for the diesel generators at the power plant. Japan provided ¥100 million (AUD 1.04 million) in 2008-2009 for diesel fuel purchases for the power plant.

2.4. Donor coordination

The Aid Management Unit of the Ministry of Finance and Economic Planning is responsible for coordinating donor aid and for minimizing project overlaps. Discussions with the AMU and with the CEO of the NUA, following the EC's approval of Nauru's EDF-10 Project Identification Fiche, have resulted in the AMU and the NUA expecting the EDF-10 funds to be committed to upgrading the electricity distribution grid to make it more efficient. Consequently, they are requesting other donors to fund other projects.

3. DESCRIPTION

3.1. Objectives

The global objectives of this project are to decrease the dependency of Nauru to fossil fuels for electricity generation (hence assisting the NUA with its balance of payments) and to improve energy services for the population.

The specific objective is to improve energy efficiency by reducing transmission and distribution losses on its electricity supply network, and by promoting energy efficiency on the demand-side. Improvement of planning at the NUA also feeds into the specific objective.

3.2. Expected results and main activities

Expected results

1. The number of breakdowns due to failures on the distribution network will be reduced by 50% by the end of the project relative to a baseline established during the first year of the project.
2. The downtime due to a malfunction on the distribution network will be reduced by 50% by the end of the project relative to a baseline established during the first year of the project.

3. Technical losses on the distribution system are expected to be reduced by 25%.
4. A compendium of the datasheets, manuals, operation and maintenance procedures, and troubleshooting procedures will be established at the NUA in electronic and hard copy formats. It will be updated as new equipment is installed. Utility staff is trained.
5. A database of NUA operational data will be created and maintained.
6. The sites identified in the planned TCF-funded study as being non-compliant with Australia/New Zealand electrical codes will be made compliant.
7. The wind energy potential of Nauru is assessed

Activities:

The EDF-10 programme would fund three activities:

Activity 1: Support to the NUA. The main activity of the present project is to support the NUA to implement the upgrades on its distribution network, as recommended by the forthcoming 2009 study. Expenditures will be limited to supply-side upgrades on the grid, not on the generation. The programme would also provide funds for technical assistance to the NUA for managing the present project. The TA will assist the NUA in its operations, specifically in reducing operating costs (by energy efficiency and renewable energy, if appropriate) and in improving its data collection processes. The TA will also prepare and supervise short-term missions (for design, evaluation and supervision of equipments as well as other potential studies). This TA will deliver and/or organise trainings for the utility staff. Activity 1 involves highly technical knowledge on utility management and electricity production and distribution management. This expertise is lacking in the NUA, hence the need for external technical assistance to (i) increase the capacity of the NUA staff and (ii) allow a smooth implementation of the project. This is compliant with the recommendations of the Backbone Strategy.

Activity 2: Continue PIGGAREP wind monitoring study. Nauru's wind resource has not been assessed. A wind mapping study in 2006 has identified a site in Ijuw (north-east of the island) that warrants a monitoring study. PIGGAREP has provided funds for a wind monitoring study at that site that will measure the wind speed in Nauru for a period of one year starting in July 2009. As the study lasts one year, and as Nauru is subject to cyclical weather patterns, the data that are obtained would benefit from being reinforced with additional years of data collection. The extended study is to last up to 3 years if the data are promising.

Activity 3: Demand side energy efficiency activities. The Energy Efficiency Action Plan developed under EDF-9 is to be supported under EDF-10. Actions will include low scale works on public infrastructure (conducting building energy audits for instance, or replacing of inefficient lighting in government buildings). Due to the high household energy consumption in Nauru and the introduction of a user-pays electricity metering system, EDF-9 provided funds for an energy efficiency

awareness campaign. This campaign is to be continued under EDF-10, as awareness campaigns are only effective if sustained.

3.3. Risks and assumptions

The EDF-10 intervention is based on several assumptions listed below, together with mitigating measures should the assumptions not hold true.

- The GoN will reinvest savings due to reduced fuel consumption in maintenance at the NUA. Lack of maintenance may jeopardize the long-term viability of the project. The EC will maintain a dialogue with the Nauruan authorities to ensure that this assumption remains valid in time.
- The new Ruston generators and prepayment meters will reduce fuel consumption so that 24-hour power becomes affordable for the government. This relies on the NUA adopting appropriate tariffs, enforcing payments, and smooth running of the generators. The EC will maintain a dialogue with the Nauruan authorities to ensure that this assumption remains valid in time
- The continuation of the wind monitoring assumes that existing land tenure will not be a problem. Should this not occur, the mast may have to be moved to a nearby site with similar topography.
- The continuation of the wind monitoring also assumes that the data from the PIGGAREP monitoring show potential. If not, this activity may have to be canceled.
- The generating equipment at the power station will properly maintained, be reliable, and not break down. Discussions with the GoN will need to take place should this assumption not hold true.
- The pre-payments meters are installed and effectively operating on "pre-payment mode" when the present project starts.

3.4. Crosscutting Issues

- *Environmental sustainability:* The project will not have any adverse environmental impacts, as it will not require additional land nor use polluting technologies. An EIA is not necessary.
- *Gender issues:* Improving the reliability of the electricity supply will make electric cooking easier, therefore improving the lives of women, who have switched to wood as a fuel source. Children will also benefit as they will be able to use their school computers all day, which will assist their learning.
- *Good governance:* By improving data collection at the utility, the project will assist the NUA in making its operations more transparent and in making its managers more accountable.
- *Financial sustainability:* With the expected reduction in transmission and distribution losses, the GoN will spend less money on fuel to run the NUA generators, and will therefore have more left for maintenance of the installed equipment.

3.5. Stakeholders

The main stakeholder in this project is the NUA, as it will be the main beneficiary. The GoN will also benefit, as it provides electricity free of cost to the NUA, and as such any reductions in fuel consumption at the utility will be felt by the Government. The Nauru Island Association of Non-Governmental Organizations (NIANGO) is the only island-wide NGO operating in Nauru. It has been extensively involved in formulating the energy efficiency awareness campaign undertaken under EDF-9, and is expected to be involved in EDF-10's awareness campaign as well. The preparation for the present project started in late 2008. Concept notes were circulated to the AMU and the NUA for comments, and individual and group discussions between the REP-5 PMU, the AMU, and the NUA then took place. NIANGO was involved at a later stage in the project formulation.

4. IMPLEMENTATION ISSUES

4.1. Method of implementation

The Project will be implemented by partially decentralised management. The overall responsibility for the implementation of the programme lies with the NAO, who may request the EC to implement technical assistance contracts under Article 19.c of the Cotonou Agreement. Programme Estimates will be implemented through direct decentralised operations. Apart from the main service contract (main technical assistance) and the main supply contract (electricity grid equipments), the programmes estimates will include all contracts related to the implementation of the present project.

The Commission controls ex ante all the procurement procedures except in cases where programmes estimates are applied, under which the Commission applies ex ante control for procurement contracts > 50.000 EUR and may apply ex post for procurement contracts • 50.000 EUR. The Commission controls ex ante the contracting procedures for all grant contracts.

Payments are executed by the Commission except in cases where programmes estimates are applied, under which payments are executed by the beneficiary country for operating costs and contracts up to the ceilings indicated in the table below.

The responsible Authorising Officer ensures that, by using the model of financing agreement for decentralised management, the segregation of duties between the authorising officer and the accounting officer or of the equivalent functions within the delegated entity will be effective, so that the decentralisation of the payments can be carried out for contracts up to the ceilings specified below."

Works	Supplies	Services	Grants
< €300,000	< €150,000	< €200,000	< €100,000

4.2. Procurement procedures and programme estimates

All contracts implementing the action must be awarded and implemented in accordance with the EDF procedures and standard documents laid down and published by the EC for implementation of external operations, in force at the time of the launch of the procedure in question. Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the 10th EDF. All programme estimates must respect the procedures and standard documents laid down by the EC, in force at the time of the adoption of the programme estimate in question.

The generation and distribution of electricity in Nauru is based on Australian and New-Zealand standards, obviously well know by engineers from these countries. On the basis of (i) technology suiting local conditions, (ii) increase of competitiveness and (iii) to avoid excessive increase of the cost of the project, **derogation from the rules of origin and nationality established and published by the EC regarding the award of contracts in the context of cooperation with third countries is requested.** For any other derogation the Contracting Authority must receive the prior written approval of the EC.

4.3. Budget and calendar

The total project cost is estimated at Euros 2,300,000, of which Euros 2,300,000 shall be financed the general budget of the European Communities. The budget of the part of the project for which the payments of expenditure will be decentralised sets out as follows:

Categories	Total In Euros
Activity 1: Support to the NUA (1 supply contract + 1 service contract+ PE)	1,900,000
Activity 2: Continue PIGGAREP wind monitoring study (PE)	60,000
Activity 3: Demand side energy efficiency activities (PE)	170,000
Communication/ Visibility (PE)	23,000
External Evaluation (service contract)	40,000
Audit (service contract)	40,000
Contingencies	67,000
TOTAL	2,300,000

The operational duration of the project is 60 months. Indicative timetables for the activities are given below:

Activities	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Recruitment of TA																				
Large contract tendering and awarding																				
Installation and commissioning of equipment																				
Collection, analysis of NUA data by TA																				
Recruitment of short-term TA for small studies as needed or for commissioning equipment																				
Procurement of supplies <€150,000																				
PIGGAREP monitoring (not EDF-10)																				
Continuation of monitoring (EDF-10)																				
PIGGAREP feasibility study (non EDF-10 fund)																				
Recruitment of Energy Efficiency Officer																				
Implementation of EE Action Plan																				
Small-scale awareness campaigns																				
Monitoring by TA from Activity																				
Closure phase	Years 6 & 7																			

4.4. Performance monitoring

The performance monitoring shall be established by use of EuropeAid Standard Indicators. Values to be provided are: baseline value without (before) the action, and target values with and without the action (for the overall project). Potential indicators are: number of kWh lost on transmission lines; amount of fuel used by NUA per kWh generated; Peak load at NUA; Number of transmission system breakdowns.

4.5. Evaluation and audit

Progress of the project will be monitored by the NAO and the EC. An evaluation of the Project will be conducted at the midterm and end of the programme. A provision for Audit is included in the budget. Under the 10th EDF Financial Regulation, the EC can use this provision to organise an independent audit of expenditure under this Agreement.

4.6. Communication and visibility

The visibility activities will mostly be limited to placards, stickers, and TV and radio interviews. The energy efficiency radio show that was started under EDF-9 will continue under EDF-10. All studies, reports, conferences and seminars supported under this initiative will highlight the EU's financial support via logos and banners. Press releases with information on the EU's funding support to Nauru will be issued to coincide with significant events in the programme cycle such as the signing of Finance Agreements, launching of programmes, reviews and evaluations.