



IIEC

International Institute for Energy Conservation



Cook Islands



Papua New Guinea



Tonga



Samoa



Vanuatu

TA 7798 - REG:
**PROMOTING ENERGY EFFICIENCY
IN THE PACIFIC (PHASE 2)**

PROGRESS REPORT
JANUARY TO MARCH 2014

COOK ISLANDS

Prepared for

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April 2014

Partners for Sustainable Energy and Environmental Solutions →

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Acronyms

<i>ADB</i>	-	<i>Asian Development Bank</i>
<i>APS</i>	-	<i>Aitutaki Power System</i>
<i>BCI</i>	-	<i>Bank of the Cook Islands</i>
<i>BTIB</i>	-	<i>Business Trade & Investment Board</i>
<i>CFL</i>	-	<i>Compact Fluorescent Lamp</i>
<i>CICC</i>	-	<i>Cook Islands Chamber of Commerce</i>
<i>CIIC</i>	-	<i>Cook Islands Investment Corporation</i>
<i>CITC</i>	-	<i>Cook Islands Tourism Corporation</i>
<i>CITC</i>	-	<i>Cook Islands Trading Corporation</i>
<i>EE</i>	-	<i>Energy Efficient</i>
<i>EE&C</i>	-	<i>Energy Efficiency and Conservation</i>
<i>EWA</i>	-	<i>Electrical Workers Association</i>
<i>GEF</i>	-	<i>Global Environmental Facility</i>
<i>IIEC</i>	-	<i>International Institute for Energy Conservation</i>
<i>MEPS</i>	-	<i>Minimum Energy Performance Standards</i>
<i>MFEM</i>	-	<i>Ministry of Financial and Economic Management</i>
<i>MOE</i>	-	<i>Ministry of Education</i>
<i>MOIP</i>	-	<i>Ministry of Infrastructure and Planning</i>
<i>NES</i>	-	<i>National Environmental Services</i>
<i>NZD</i>	-	<i>New Zealand Dollars</i>
<i>PDMC</i>	-	<i>Pacific Developing Member Country</i>
<i>PRISM</i>	-	<i>Pacific Regional Information System</i>
<i>PIC</i>	-	<i>Pacific Island Country</i>
<i>REEEP</i>	-	<i>Renewable Energy and Energy Efficiency Partnership</i>
<i>REDD</i>	-	<i>Renewable Energy Development Division</i>
<i>RETA</i>	-	<i>Regional Technical Assistance</i>
<i>TAU</i>	-	<i>Te Aponga Uira O Tumu-Te-Varovaro</i>

1 INTRODUCTION

Based on a consultation process conducted in 2007 on behalf of the Global Environmental Facility (GEF) Pacific alliance for Sustainability, five Pacific developing member countries (PDMCs) — the Cook Islands, Papua New Guinea (PNG), Samoa, Tonga, and Vanuatu expressed interest in and assigned high priority to the reduction of fossil fuels. In response the Asian Development Bank (ADB) approved a regional Technical Assistance (RETA) for promoting Energy Efficiency in the Pacific in September 2008. This program was to be implemented in 2 Phases and the first phase which concluded in May 2011 focused on identifying a pipeline of specific energy efficiency projects for funding or co-financing by ADB, GEF and other sources.

The objective of Phase 2 (PEEP2) is to implement EE measures in the 5 PDMCs in order to contribute to achieving the overall goal reducing energy consumption in the residential, commercial and public sectors through the implementation of energy efficiency measures, and to establish the policy and implementation frameworks to move towards the goals of reducing fossil fuel imports, achieving total energy savings, and reducing GHG emissions.

The International Institute for Energy Conservation (IIEC), Thailand was selected as the TA Consultants for the implementation of this project. The Notice to Proceed (NTP) was issued by the ADB on 4 November 2011. The project commenced on 6 November 2011 and scheduled to be completed by 5 November 2014. For this project the following reports for the Cook Islands have been submitted:

- The Inception Report outlining the approach, work plan and schedule was submitted in March 2012;
- The first Quarterly Progress Report was submitted in April 2012; and
- The second Quarterly Progress Report was submitted in August 2012.
- The third Quarterly Progress Report was submitted in October 2012.
- The Interim Report summarizing the work completed in the first project year was submitted in November 2012.
- The fourth Quarterly Progress Report was submitted in January 2013.
- The fifth Quarterly Progress Report was submitted in April 2013.
- The sixth Quarterly Progress Report was submitted in July 2013.
- The seventh Quarterly Progress Report was submitted in October 2013.
- The eighth Quarterly Progress Report was submitted in January 2014.

This Progress Report outlines the activities undertaken during the period **January to March 2014**.

1.1 Project Overview

1.1.1 Project Objectives

The expected results of this PEEP-2 include the following:

- An established energy database in the five PDMCs with provision for expansion to other PDMCs
- National energy policies with established practical and implementable EE targets
- Established government policies and procedures for use of EE appliances, incorporation of EE best practices in building codes, capacity building of service providers
- Large-scale implementation of EE projects in residential, commercial and government sectors and public lighting (street-lighting and traffic lights).
- Comprehensive information dissemination program for all stakeholders
- Leveraging other regional energy programs to maximise benefits to all PDMCs

1.2 Summary of Phase 2 Project Components

1.2.1 Output 1: Development of Energy Use Database

The main objectives of the task under this output are to design, develop and implement an Energy End-Use Database, provide access to the stakeholders, and implement procedures for maintaining and updating it. The database will provide relevant data and information for the implementation and monitoring of the activities under Outputs 2, 3 and 4. The main output will be an accessible database of energy use by sector and major appliance category in each of the five participating PDMCs.

In the development of the database the constraints identified in relation to data and data quality identified in PEEP-1 will be addressed. Relevant data sources from other regional energy programs will be considered, namely, Pacific Regional Information System (PRISM) project, energy sector reviews by SPC Applied Geoscience and Technology Division (SOPAC) and Renewable Energy and Energy Efficiency Partnership (REEEP).

1.2.2 Output 2: Development of Energy Efficiency Policies and Procedures

Based on the initial assessment of EE policy measures in PEEP-1 RETA, this task will review these assessments and define the institutional frameworks and the implementing regulations and procedures to establish targets and achieve the needed results to accomplish these targets. The major objectives of this task are to:

- Establish practical and implementable energy efficiency targets and incorporate these into national energy policies and plans;
- Suppress the sale and use of high-energy-consumption appliances and equipment through appropriate import regulations brought about by the development and enforcement of effective minimum energy performance standards (MEPS) and/or energy labeling;
- Improve energy efficiency best practices for newly built residential, commercial, and government buildings, including the establishment of simple, effective, and enforceable energy efficiency provisions in building codes for new buildings;
- Develop and implement training programs for local experts in undertaking energy audits and in providing energy efficient products and services; and
- Support the development of motivated and organized service providers that have incentives to implement energy efficiency activities.

The energy efficiency (EE) policies appropriate for each country will be designed to address the key EE barriers which are influenced by the EE needs and opportunities and the prevailing market conditions in the country.

1.2.3 Output 3: Implementation of Energy Efficiency Programs

The objective of this task is the design and implementation of a range of Energy Efficiency and Conservation (EE&C) programs in the five PDMCs in meeting the overall project objectives of reducing fossil fuel consumption for electricity generation and the consequent reduction of greenhouse gas (GHG) emissions. The proposed EE&C programs will build on the results of the pilot programs implemented in Promoting Energy Efficiency in the Pacific – Phase 1 (PEEP1) project. This task will aim to enhance the achievements in PEEP1 towards large scale implementation of sustainable EE&C programs to achieve tangible benefits to the respective electricity utility, consumers and society as a whole. The emphasis will be on scale-up opportunities, not only in the five PDMCs, but also in the other Pacific Island Countries (PICs). Accurate determination of program impacts is considered paramount and these will be reflected in the Monitoring & Verification (M&V) procedures adopted for each program; where feasible CDM opportunities will be explored.

This task comprises of the following activities:

- i. Energy Efficient Street Lighting Program
- ii. Energy Efficient Lighting Program for Residential, Commercial and Public Sector
- iii. Implementation of EE Measures in Hotels and Commercial Sector
- iv. Implementation of EE Measures in the Public Sector

1.2.4 Output 4: Information Dissemination and Public Awareness

The objective of this task is to implement a comprehensive information dissemination program to all stakeholders in the five PDMCs and to expand to other PDMCs using regional events. Public awareness and education programs using a variety of promotional channels are also included in this task. The basic approach to this task is both country specific (five participating PDMCs) and regional (all PDMCs) to ensure the widest promotion of the benefits of energy saving technologies using actual case studies and implementation models that would be relevant for all PDMCs.

This activity will be undertaken in collaboration with the Pacific Power Association (PPA) and other regional agencies to ensure participation of all PDMCs and leverage funds from other programs. In addition there will be in-country programs implemented by the International and National EE Country Experts and short-term experts in various fields.

2 PROGRESS BY COMPONENTS

2.1 Output 1: Development of Energy Use Database

The following activities was undertaken during this period:

2.1.1 Review, Compilation and Validation of Available Data

This activity is completed.

2.1.2 Conduct of In-Country Surveys

This activity is completed.

2.1.3 Design and Development of Energy End-use Database

During this period, IIEC continued to enhance and update the energy use database. IIEC is finalizing the design of the residential component of the database and inputting the residential survey findings in the Cook Islands.

Once all residential survey reports have been concluded, the IIEC team will add a section on residential energy use to the online database. The IIEC team will also be training the Implementing Agency staff and other relevant stakeholders in the Cook Islands on how to update the energy use database on a regular basis to ensure continued use beyond the project duration. This training will be integrated with the energy audit training modules 3 and 4 to be undertaken from the 2nd to the 9th April 2014.

The energy use database is currently incorporated in the PEEP2 website (<http://www.ee-pacific.net>) and comprises of data made available by the international and national consultant to date. There is general energy information covering all PDMCs. It also includes energy use data for the building sector in the Cook Islands, Samoa and Tonga. Data compilation for PNG and Vanuatu is on-going.

2.1.4 Database Population, Update and Maintenance

See section above.

2.2 Output 2: Development of Energy Efficiency Policies and Procedures

The following activities was undertaken during this period:

2.2.1 Establishment and Review of the National Energy Policies and Plans

This activity has been completed

2.2.2 Suppress Sales of High Energy Consumption Appliances

The TA will continue to offer support and help to the Pacific Appliance Labelling and Standards (PALS) National Coordinator on the Cook Islands PALS Project.

2.2.3 EE Best Practices in New Construction

This activity is completed.

2.2.4 Develop and Conduct Training Plans for Local Experts

2nd Training Workshop: The second training workshop covering Module 3 (Contracting, Project Management, and Measurement & Verification of Energy Efficiency Projects) and Module 4 (Detailed Energy Audit – Investment Grade Audit), will be undertaken from 2 – 9 April 2014. The venue for the workshop will be the Edgewater Resort & Spa and field activities will also include the Rarotonga General Hospital.

2.2.5 Support Development of Organized and Motivated Service Providers

No activities planned.

2.3 Output 3: Implementation of Energy Efficiency Programs

The following activities were undertaken during this period:

2.3.1 Activity I - Energy Efficient Street Lighting Program

Airport Car Park, Punanga Nui Market and Ports Authority Projects (Projects Code 1, 2 and 6): The TA Consultants coordinated the delivery of poles and erection utilising local contractors. The delivery of the poles is only expected in June 2014 as ADB only process the contract signing payment to the supplier on the 12th March 2014 (initial request for payment was made by IIEC on the 28th January). In addition, issues with the cost of foundations for the 3 sites was encountered and discussions with REDD were held to find a solution to prevent delays in installation.

Outer Islands Street Lighting Project (Code 23): The Bid Evaluation report was approved by ADB and the contract was prepared for execution. ADB indicated that the contract implementation procedures are being revised enabling IIEC to sign contracts and make payments directly to Suppliers. The TA Consultants are currently awaiting a contract variation from ADB in order to proceed with implementation.

2.3.2 Activity II - Energy Efficient Lighting in Residential, Commercial and Government Sectors

2.3.2.1 Energy Efficient Residential Lighting Program

Procurement: The procurement of the T5 lighting equipment was undertaken along with similar projects in Tonga, Samoa and Vanuatu. The bid evaluation report was approved by the ADB and the respective contract was prepared for execution. ADB indicated that the contract implementation procedures are being revised enabling IIEC to sign contracts and make payments directly to Suppliers. The TA Consultants are currently awaiting a contract variation from ADB in order to proceed with implementation. The installation in the Cook Islands will be undertaken by CIIC. It is expected that the award of contract for the supply and delivery of the lighting will be completed in the next quarter.

2.3.2.1.1 Energy Efficient Refrigerator Replacement Program

Program Monitoring: Weekly program monitoring of sales was undertaken. Monitoring of energy consumption was continued as per the procedures outlined in the Design Report. Analysis of

electricity bills before and after the acquisition of the new units was undertaken.

Program Marketing: The Consultants worked with the participating retailers and media in promoting the program using testimonials from participants.

Advance Payment Account: The Consultants disbursed funds to the retailers as per the guidelines established by REDD. Monthly financial statements were prepared and submitted to ADB in compliance with the ADB’s Technical Assistance Disbursement Handbook. The third instalment from ADB was received in mid March 2014 and a reconciliation of the account was undertaken. A request for a final instalment will be made to the ADB after consolidating the pending invoices.

Program Closure: The FFRP was concluded on the 10th of March 2014 and adequate notice was given to consumers’ via media announcements and retailers. There was a significant increase in sales in the month of February 2014 resulting in total sales of 285 units. As a result the total expenditure is likely to exceed slightly the US\$100,000 originally allocated.

Design of AC Replacement Programme: A new AC replacement programme of window-type AC with high efficiency inverter type split units was considered. Assessment of current market penetration of old ACs was undertaken prior to the design of the program. An Expression of Interest was issued and four AC retailers were selected for participation. A copy of the EOI is given in Attachment 5.2. The implementation model was the same as for the FFRP. A Project Proposal was prepared and submitted to ADB for approval on the 18th March 2014.

2.3.2.2 Energy Efficient Commercial and Public Sector Lighting Program

This is covered under Activity IV (Section 3.4.4).

2.3.2.2.1 Development of Lamp Waste Management Strategy

A formal handing over ceremony of the Bulb Eater was undertaken (see article below) at the beginning of the quarter.



Figure 2-1 – Local Newspaper Article on Handing Over of Bulb Eater

The Consultants coordinated with the respective stakeholders to develop a sustainable Lamp Waste Management Plan for the Cook Islands based on the proposed strategy. This activity is currently on-going.

2.3.3 Activity III - Implementation of EE Measures in Hotels and Commercial Sector

Monitoring Activities: Baseline monitoring for the Edgewater AC replacement project was conducted during the design phase. The installation commenced in late December and has not been completed to date. Detailed monitoring activities will commence following installation of all AC units.

2.3.4 Activity IV - Implementation of EE Measures in the Public Sector

Program Implementation: The bid evaluation report was approved by the ADB and the respective contract was prepared for execution. ADB indicated that the contract implementation procedures are being revised enabling IIEC to sign contracts and make payments directly to Suppliers. The TA Consultants are currently awaiting a contract variation from ADB in order to proceed with implementation. The installation in the Cook Islands will be undertaken by CIIC. It is expected that the award of contract for the supply and delivery of the lighting will be completed in the next quarter.

2.4 Output 4: Information Dissemination and Public Awareness

Coordinate Seminar for Small Hotel Operators: The tourism corporation proposed the conduct of a half-day seminar for small hotel operators on practical energy saving opportunities. No progress was made on this activity due to the peak tourist season.

The other activities undertaken in this component are included in the Common Activities Progress Report prepared separately. This report includes an update on the:

- Energy Efficiency Guidelines for Hotels
- Energy Efficiency Guidelines for Public and Commercial Buildings
- Energy Efficiency Guidelines for Street Lighting
- Home Energy Guide
- PEEP2 Website

3 WORK PLAN FOR APRIL TO JUNE 2014

3.1 Introduction

A detailed work plan is provided for the next reporting period (April to June 2014). Subsequent work plans will be provided in the Quarterly Progress Reports.

3.2 Output 1: Development of Energy Use Database

The following activities will be undertaken during this period:

3.2.1 Review, Compilation and Validation of Available Data

This activity is completed.

3.2.2 Conduct of In-Country Surveys

This activity is completed.

3.2.3 Design and Development of Energy End-use Database

During this period, IIEC will continue to enhance and update the energy use database.

Once all the residential energy surveys are concluded, the IIEC will finalize design of the residential sector component of the database and inputting the residential survey findings.

3.2.4 Database Population, Update and Maintenance

See section above.

3.3 Output 2: Development of Energy Efficiency Policies and Procedures

The following activities will be undertaken during this period:

3.3.1 Establishment and Review of the National Energy Policies and Plans

This activity has been completed.

3.3.2 Suppress Sales of High Energy Consumption Appliances

The TA will continue to offer support and help to the PALS National Coordinator on the Cook Islands PALS Project.

3.3.3 EE Best Practices in New Construction

This activity has been completed

3.3.4 Develop and Conduct Training Plans for Local Experts

2nd Training Workshop: The second training workshop covering Module 3 (Contracting, Project

Management, and Measurement & Verification of Energy Efficiency Projects) and Module 4 (Detailed Energy Audit – Investment Grade Audit), will be undertaken from 2 to 9 April 2014.

3.3.5 Support Development of Organized and Motivated Service Providers

No activities planned.

3.4 Output 3: Implementation of Energy Efficiency Programs

The following activities will be undertaken during this period:

3.4.1 Activity I - Energy Efficient Street Lighting Program

Airport Car Park, Punanga Nui Market and Ports Authority Projects (Projects Code 1, 2 and 6): The TA Consultants will coordinate the delivery of poles and erection utilising local contractors. The delivery of the poles is expected in June 2014. It is expected that installation and commissioning of the lighting systems at the 3 sites to be completed during the 3rd Quarter.

Outer Islands Street Lighting Project (Code 23): Following ADB variation order for contract administration to IIEC, TA Consultants will undertake contract signing and coordinate delivery of equipment. The delivery of equipment is scheduled early in the 3rd Quarter.

3.4.2 Activity II - Energy Efficient Lighting in Residential, Commercial and Government Sectors

3.4.2.1 Energy Efficient Residential Lighting Program

Procurement: Following ADB variation order for contract administration to IIEC, TA Consultants will undertake contract signing and coordinate delivery of equipment. The delivery of equipment is scheduled early in the 3rd Quarter.

3.4.2.1.1 Energy Efficient Refrigerator Replacement Program

Program Monitoring and Evaluation: Program evaluation will be undertaken based on the procedures outlined in the Design Report. This includes comparison of electricity bills before and after installation and followed up with surveys of selected participants. A M&E Report will be prepared after evaluation of the impacts have been completed.

Advance Payment Account: The Consultants will prepare the final liquidation report to ADB after payment of all invoices and procedures for account closure and transfer of the balance to ADB will be adopted.

3.4.2.1.2 Energy Efficient AC Replacement Program

Program Launch: Following ADB approval of the ACRP the MOUs with the participating retailers will be executed. The MOUs will outline the roles and responsibilities of the stakeholders. The MOU signing ceremony will declare the launch of the program and the closing date is expected to be around mid September 2014.

Program Marketing: The Consultants will work with the participating retailers and media in promoting the program. A program brochure will be prepared for distribution to prospective participants.

Advance Payment Account: The Consultants will assist REDD in establishing a separate account for the receipts of funds from ADB and disburse funds to the retailers as per the guidelines established by REDD. Monthly financial statements will be prepared and submitted to ADB in compliance with the ADB's Technical Assistance Disbursement Handbook.

3.4.2.2 Energy Efficient Commercial and Public Sector Lighting Program

This is covered under Activity IV (Section 3.4.4).

3.4.2.2.1 Development of Lamp Waste Management Strategy

The Consultants will coordinate with the respective stakeholders to develop a sustainable Lamp Waste Management Plan for the Cook Islands based on the proposed strategy.

3.4.3 Activity III - Implementation of EE Measures in Hotels and Commercial Sector

Monitoring Activities: Baseline monitoring was conducted during the design phase. It is planned to monitor energy consumption prior to the installation of the ACs with all the other retrofit works completed. Detailed monitoring activities will commence following installation of all AC units.

3.4.4 Activity IV - Implementation of EE Measures in the Public Sector

Program Implementation: Following ADB variation order for contract administration to IIEC, TA Consultants will undertake contract signing and coordinate delivery of equipment. The delivery of equipment is scheduled early in the next Quarter. Discussions will be undertaken with CIIC to finalize plans for installation.

3.5 Output 4: Information Dissemination and Public Awareness

Coordinate Seminar for Small Hotel Operators: The tourism corporation proposed the conduct of a half-day seminar for small hotel operators on practical energy saving opportunities. The TA Consultants will coordinate the seminar arrangements with the tourism corporation.

The other activities undertaken in this component are included in the Common Activities Progress Report prepared separately. This report includes an update on the:

- Energy Efficiency Guidelines for Hotels
- Energy Efficiency Guidelines for Public and Commercial Buildings
- Energy Efficiency Guidelines for Street Lighting
- Home Energy Guide
- PEEP2 Website

3.6 Project Schedule - Deliverables

The following (Table 3.1) is the reporting schedule for the specified deliverables:

Table 3.1 – Project Reporting Schedule

<i>Output</i>	<i>Reports</i>	<i>Details</i>	<i>Submission Date</i>	<i>Status</i>
		Inception Report	Mar 2012	Submitted
1		Energy-Use Report (included in Interim Report)	Feb 2013	Submitted
		Prototype Database	Mar 2013	Completed
		Final Energy End-use Database	Dec 2013	
2		Report on RE Targets	Aug 2012	Submitted
		Working Paper on EE Targets	Apr 2013	Draft
		Report on Proposed MEPS	Apr 2013	Note 1
		Recommendations on revisions to Building Code	Oct 2012	Submitted
		Energy Audit Training Reports	2013-2014	Mod 1&2 - submitted
		Training Reports for ESPs (Activity Cancelled)	2012-2014	Cancelled
3		Street Lighting Design Reports	Oct 2012	Submitted
		Residential Lighting Design Report	Feb 2013	Submitted
		Refrigerator Program - Design Report	Oct 2012	Submitted
4		Seminar / Workshop Reports	2012-2014	On-going
		Public Awareness Materials	2012-2014	On-going
		Progress Reports		
	I	January- March 2012	30 Apr 2012	Submitted
	II	April - June 2012	31 Jul 2012	Submitted
	III	July - September 2012	31 Oct 2012	Submitted
	IV	October - December 2012	31 Jan 2013	Submitted
	V	January - March 2013	30 Apr 2013	Submitted
	VI	April - June 2013	31 Jul 2013	Submitted
	VII	July - September 2013	31 Oct 2013	Submitted
	VIII	October - December 2013	31 Jan 2014	Submitted
	IX	January - March 2014	30 Apr 2014	Submitted
	X	April - June 2014	31 Jul 2014	

Note 1: This activity will be undertaken by SPC under the PALS program

4 PROJECT MANAGEMENT AND STAFFING PLAN

4.1 Contractual Issues

4.1.1 Staffing

The National EE Expert (Terekino Vaireka) for the Cook Islands continued to provide assistance to the Project.

4.1.2 Project Schedule and Components

The Project Schedule for Year 3 is given in **Attachment 5.1**.

4.1.3 Contract for Supply of Goods

The Form of Contract for the supply of equipment and services under Component 3 was finalized and was used for initial contracts. In the beginning of this Quarter 2014, ADB indicated their preference to transfer equipment contract and payment responsibilities to IIEC. Currently, a contract variation order to this effect is still pending and until then procurement of equipment is on hold for the following projects in the Cook Islands:

- Project Code 7: Energy Efficiency Program in Public Buildings
- Project Code 17: Residential Energy Efficient Lighting Program
- Project Code 23: Energy Efficient Street Lighting Project in the Outer Islands

4.2 Project Office

The PEEP2 Project Office is established at the REDD. All facilities have been provided by the Implementing Agency.

5 ATTACHMENTS

5.1	PROJECT SCHEDULE – YEAR 3
5.2	EOI FOR AC REPLACEMENT PROGRAM (ACRP)

5.1 Project Schedule – Year 3

Output 1

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sub-Task 1: Review, Compilation and Validation of Available Data and Data Collection Mechanisms												
Identify existing national and regional data resources												
Collect data from key sources - TAU, National Census, CITC, NES, Retailers etc												
Analyse baseline data on energy use by sector												
Analyse energy use by major appliance category												
National stakeholder discussions on data collected												
Final Analysis												
Sub-Task 2: Conduct of In-Country Surveys to Collect Missing Data												
Identify the total population of surveys for each major end-use sector												
Design sampling plans for each major end-use sector												
Work with REDD to develop survey questionnaires and plans												
Conduct pilot surveys and adjust survey approaches												
Conduct large scale national surveys												
Adjustment of baseline and energy use data based on survey findings												
Sub-Task 3: Design and Development of the Energy End-Use Database												
Design overall system architecture and database												
Develop the database prototype												
Design and develop common templates for database population												
Conduct pilot tests on data entry and verify templates												
Organize consultation workshops on the Energy End-Use Database												
Finalize the Energy End-Use Database												
Sub-Task 4: Database Population, Update and Maintenance												
Design and implement capacity building program for database population												
Populate and update database												
Prepare guideline and action plan for database update and maintenance												
Working with implementing agencies to update and maintain database												

Output 2

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Activity I: Establish RE and EE Targets in National Energy Policies and Plans												
Review of National RE Targets	COMPLETED											
Review of RE Plans, data on implementation and forecasts for RE												
Prepare RE Assessment Report												
Review of National EE Targets												
Market Data Collection and Analysis												
Estimation of EE Targets												
Stakeholder Meetings and Finalise EE Targets												
Activity II: Suppress Sales of High Energy Consumption Appliances and Equipment												
Activities will commence after the finalization of PALS Work Plan												
Review PEEP-1 Reports												
Conduct Market Assessment												
Review International & Regional MEPS Approaches												
Conduct Stakeholder Consultations												
Develop Strategy for introduction of MEPS												
Develop mechanisms for compliance monitoring												
Activity III: EE Best Practices for New Construction - Residential, Commercial and Government Buildings												
Review PEEP-1 Reports												
Review Current Building Code												
Review International Best Practices (including Palau Model for Residential Sector)												
Stakeholder Consultation												
Develop Revised Building Codes												
Finalize EE building code and Implementation procedures												
Develop mechanisms for compliance monitoring												
Activity IV: Develop and Implement Training Programs for Local Experts												
Participant Selection												
Conduct Training Needs Assessment												
Develop Training Plans for Energy Audits												
Data Collection of Building and Enterprises												
Identify Training Resources												
Conduct training programs												
Sub-Task 5: Support the Development of Motivated and Organized Service Providers												
Activity Postponed due to insufficient Service Providers in the PDMCs. To be further assessed following the energy audit training modules												
Review PEEP-1 Reports												
Conduct Survey of Service Providers												
Assess Capacity Building Needs												
Develop Training Program for Stakeholders												
Identify Training Resources												
Conduct Training Program												
Implementation Support to Service Providers												

Output 3

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Activity I: EE Street Lighting Program												
ADB Approval for Street Lighting Program Plan (Airport Car Park and Punanga Nui Market)												
Preparation of specifications and Bid Documents; MOU												
Bidding, Selection and Contract Award												
Delivery, Installation and Commissioning												
Monitoring & Evaluation; Case Study Reports												
Project Proposal and ADB Approval - Ports Authority Marina and Wharf												
Preparation of specifications and Bid Documents; MOU												
Bidding, Selection and Contract Award												
Delivery, Installation and Commissioning												
Monitoring & Evaluation; Case Study Reports												
Activity II: EE Lighting in Residential, Commercial and Government Buildings												
<i>Sub-Task A: EE Residential Lighting Program</i>												
Review of CFL Program in Cook Islands (PEEP-1)	Completed											
Data Gathering	Completed											
Program Design and ADB Approval												
Implementation (Procurement and Installation)												
Monitoring & Evaluation												
Case Study Reports												
<i>Sub-Task B: Refrigerator Replacement Program</i>												
Project Proposal and ADB Approval												
Finalise Implementation Procedures												
Establish escrow Account and Finalize MOUs for reimbursement												
Program Implementation												
Monitoring & Evaluation												
Case Study Reports												
<i>Sub - Task C: Development of Lamp Waste Management Strategy</i>												
Review of Strategy in PEEP-1 (Cook Islands)												
Data Gathering and Review existing Policies, Regulations and Market Information												
Conduct Policy and Market Assessment												
Develop Lamp Waste Management Strategy for CK												
Activity III: EE Implementation in Hotels and Commercial Buildings												
<i>Sub - Task A: Selection of Hotels and Commercial Buildings</i>												
Develop Selection Criteria and Issue EOI (via REDD)	Completed											
Review of EOI and selection	Completed											
Finalize MOU with selected sites	Completed											
<i>Sub - Task B: Conduct Energy Audits</i>												
Data Gathering												
Preliminary data analysis												
Conduct Energy Audits												
<i>Sub - Task C: Implementation</i>												
Project Proposals and ADB Approval												
Preparation of specifications and Bid Documents												
Bidding, Selection and Contract Award												
Installation, Monitoring and Evaluation												
Case Study Reports												
Activity IV: EE Implementation in Government Buildings												
<i>Sub - Task A: Inventory of Government Buildings</i>												
Building Inventory	Completed											
Data Collection and Screening												
<i>Sub - Task B: Conduct of Energy Audits</i>												
Develop Energy Audit Procedures	Completed											
Conduct of Energy Audits												
Finalize Equipment Inventory												
<i>Sub - Task C: Implementation Assistance</i>												
Project Proposals and ADB Approval												
Preparation of specifications and Bid Documents												
Bidding, Selection and Contract Award												
Delivery and Installation												
Monitoring & Evaluation; Case Study Reports												

Output 4 and Project Management

	2013											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Activity 1: National Coordination												
Establish National Project Steering Committee (PSC)	Completed											
PSC Meetings												
Activity 2: Seminars and Awareness Campaigns												
Design of Energy Saving Tips for TAU Bills												
Seminar for Hotel Operators												
Energy Saving Guide for Residential Sector												
Publications												
EE Guidelines for Hotels												
EE Guidelines for Commercial and Public Buildings												
EE Guidelines for Street Lighting												
PROJECT MANAGEMENT												
Inception Report	Completed											
Interim Report - Year 1	Completed											
Interim Report - Year 2												
Interim Report - Year 3												
Project Completion Report												
Progress Reports												

 Project Deliverables

5.2 EOI for AC Replacement Program

PROMOTING ENERGY EFFICIENCY IN THE PACIFIC (PHASE 2)

1. INTRODUCTION

The Asian Development Bank (ADB), in cooperation with the Global Environment Facility (GEF) and the Government of Australia, initiated a regional Technical Assistance project for Promoting Energy Efficiency in the Pacific (PEEP) in September 2008. This project is being conducted under GEF's Pacific Alliance for Sustainability and covers five Pacific developing member countries (PDMCs) - the **Cook Islands**, Papua New Guinea, Samoa, Tonga, and Vanuatu. The first phase of PEEP (which concluded in May 2011) identified the potential for energy efficiency (EE) and defined a pipeline of specific EE projects for funding or co-financing by ADB, GEF, the Government of Australia, and the Government of Japan. ADB has now initiated Phase 2 of PEEP and engaged the International Institute for Energy Conservation (IIEC) as the contractor for Phase 2.

PROJECT OBJECTIVES

The objective of Promoting Energy Efficiency in The Pacific: Phase 2 (PEEP2) is to improve efficiency in the use of electrical power for consumers in five Pacific developing member countries (PDMCs) - the Cook Islands, Papua New Guinea (PNG), Samoa, Tonga, and Vanuatu - through demand-side energy efficiency improvements in the residential, commercial, and government sectors of each country. There is an emphasis on improved EE in new and existing buildings, which account for a high percentage of electricity end-use in all five PDMCs. The project will focus on reducing the energy intensity of the PDMC economies and thereby enhancing energy security, making energy services more affordable to end-users, and reducing Greenhouse Gas (GHG) emissions.

PROJECT COMPONENTS

The project consists of four Components:

- Component 1: Development of Energy Use Database
- Component 2: Development of Energy Efficiency Policies and Procedures
- [Component 3: Implementation of Energy Efficiency Programs](#)
- Component 4: Information Dissemination and Public Awareness

EXPECTED OUTPUTS

The expected results of this project include the following:

- An established energy database in the five PDMCs with provision for expansion to other PDMCs
- National energy policies with established practical and implementable EE targets
- Established government policies and procedures for use of EE appliances, incorporation of EE best practices in building codes, and capacity building of service providers
- Large-scale implementation of EE projects in residential, commercial and government sectors and in public lighting (e.g. street-lighting).
- Comprehensive information dissemination program for all stakeholders
- Leveraging other regional energy programs to maximize benefits to all PDMCs

SCHEDULE

The project will be implemented over a three-year period beginning in January 2012.

WORK PLAN FOR COOK ISLANDS

The detailed work plan for the Cook Islands is currently being developed and will cover the Components and Outputs summarized below.

Output 1: Development of Energy Use Database

The main objectives of the task under this output are to design, develop and implement an Energy End-Use Database, provide access to the stakeholders, and implement procedures for maintaining and updating it. The database will provide relevant data and information for the implementation and monitoring of the activities under Outputs 2, 3 and 4. The main output will be an accessible database of energy use by sector and major appliance category in each of the five participating PDMCs.

Output 2: Development of Energy Efficiency Policies and Procedures

This Component will define the institutional frameworks and the implementing regulations and procedures to establish targets and achieve the needed results to accomplish these targets. The major objectives of this task are to:

- Establish practical and implementable energy efficiency targets and incorporate these into national energy policies and plans;
- Suppress the sale and use of high-energy-consumption appliances and equipment through appropriate import regulations brought about by the development and enforcement of effective minimum energy performance standards (MEPS) and/or energy labeling;
- Improve energy efficiency best practices for newly built residential, commercial, and government buildings, including energy efficiency provisions in building codes for new buildings;
- Develop and implement training programs for local experts in undertaking energy audits and in providing energy efficient products and services; and
- Support the development of motivated and organized service providers that have incentives to implement energy efficiency activities.

Output 3: Implementation of Energy Efficiency Programs

The objective of Component is the design and implementation of a range of Energy Efficiency and Conservation (EE&C) programs to reduce fossil fuel consumption for electricity generation and related greenhouse gas (GHG) emissions. The goal will be to develop and implement sustainable programs to achieve tangible benefits to the electricity utility, consumers and society as a whole. This Component comprises of the following activities:

- Energy Efficient Street Lighting Program
- Energy Efficient Lighting Program for Residential, Commercial and Public Sector
- Energy Efficient Fridge/Freezer Program
- **Energy Efficient Air Conditioner Replacement Program**
- Implementation of EE Measures in Hotels and Commercial Sector
- Implementation of EE Measures in the Public Sector

Output 4: Information Dissemination and Public Awareness

The objective of this Component is to implement a comprehensive information dissemination program to all stakeholders. Public awareness and education programs using a variety of promotional channels are also included. The basic approach is to develop country specific as well as regional programs to ensure the widest promotion of the benefits of energy saving technologies using actual case studies and implementation models that would be relevant for all PDMCs.

2. Air Conditioner Replacement Program (ACRP)

Summary of Program Design

PARAMETER	DESCRIPTION
Program Name	<i>Air Conditioner Replacement Program (ACRP)</i>
Rationale	<p><i>The residential and commercial sectors accounts for around 50% of the total electricity consumption in Rarotonga and more than 75% in the Outer Islands. Air conditioning has been identified as a major contributor to commercial sector electricity consumption.</i></p> <p><i>Initial surveys show that there is a high penetration of low efficiency window type ACs primarily in commercial buildings (including hotels) and some households.</i></p> <p><i>Promoting the sales of high efficiency split type AC units would result in reducing energy consumption in air conditioning refrigeration by around 15% to 20% on average.</i></p>
Strategy	<p><i>The strategy is to encourage establishments with old window-type Air Conditioners to surrender their units and provide the opportunity to purchase a high efficiency unit (3 star or higher) at the current market price.</i></p> <p><i>To promote the program the ADB will provide a rebate, similar =r to the Fridge/Freezer Replacement Program implemented in the Cook Islands since May 2013 under the Pacific Energy Efficiency Project (PEEP)</i></p>
Target Market Segment	<i>Commercial Buildings, Hotels and Households in Rarotonga and Outer Islands</i>
Program Objectives	<i>Transform the low efficiency window-type AC market to high efficiency split-type AC units that would result in significant savings in electricity costs. In addition, increase the awareness of the public of the benefits of high efficiency appliances.</i>
PROGRAM DESCRIPTION	
Scope	<i>A budgetary allocation will be sought from ADB for the program costs - subsidy to retailers, advertising and old AC disposal. The number of units sold under the program will be limited to the allocated budget.</i>
Market Survey	<i>A survey of window-type ACs in the current market was undertaken with assistance from the electrical retailers in order to determine the current penetration and scope of the program. The survey indicated that there is around 320-350 units in Rarotonga that would be eligible for replacement.</i>
Retailer Participation	<i>Electrical retailers who sell AC products bearing energy rating labels in compliance with the Australian/New Zealand scheme and able to offer after sales service would be eligible.</i>
Determination of Subsidy	<p><i>The factors to be considered in determining the subsidy would include the following:</i></p> <ul style="list-style-type: none"> <i>Incremental energy savings from the higher efficiency AC units</i>

PARAMETER	DESCRIPTION
	<p><i>compared to window-type units</i></p> <ul style="list-style-type: none"> • <i>Residual value of surrendered units</i> • <i>De-gassing and disposal fee (separate cost)</i>
IMPLEMENTATION PROCEDURE	
Selection of Retailers	<i>Expressions of Interest (EOI) from retailers - selection criteria would include agency for Australia/NZ energy star rated AC appliances, service capability in Rarotonga and Outer Islands, capacity to offer hire purchase options to customers.</i>
Product Range	<p><i>Each selected retailer is required to submit a list of the most efficient AC units to be included in the program t in a range of sizes for each Brand suitable as replacements for window-type AC units. . It is recommended that the total no: of products be limited to the sizes that are in greatest demand.</i></p> <p><i>The retailers will be required to submit a proposal incorporating the specifications of the proposed products, manufacturers' certification of performance.</i></p>
Calculation of Subsidy	<i>This will be calculated for each product based on information from manufacturers, market research in Australia/NZ and proposals from participating retailers, the specific energy consumption, residual value of old unit will be factored in the final determination.</i>
Sale of Units	<p><i>The retail price of the products (AC Units) under the program will be determined by the retailers, thus providing customers a choice of brands and prices and credit terms (if applicable).</i></p> <p><i>Receipt books will be developed for the program that would include information of the retailer, customer, details of unit sold, details of unit surrendered etc.</i></p> <p><i>The retailer will be responsible for the delivery and installation of the new unit to the customer premises and the recovery of the old unit and delivery to the disposal site</i></p>
Subsidy Payment	<i>Retailers will submit monthly statements to REDD for reimbursement.</i>
Marketing Strategy	<p><i>Program marketing will be coordinated through REDD using funds provided by ADB. All marketing materials will be developed from the budget.</i></p> <p><i>In addition, Retailers are free to do their own advertising and ensuring that the benefits claimed in their products are accurate.</i></p>
Disposal	<i>A separate company will be contracted for de-gassing the units and safe disposal under the guidelines of the National Environment Services.</i>

PARAMETER	DESCRIPTION
Fund Management	<p><i>A separate account will be established with the OPM for the disbursement of funds provided by the ADB. The funds will be used for marketing, disposal and subsidy for retailers.</i></p> <p><i>Fund management guidelines will be finalized between OPM and ADB including audited financial statements at the end of the project.</i></p> <p><i>The total allocation by ADB is not fixed and there may be provision for top-up after the initial allocation.</i></p> <p><i>Retailers will be advised once 70% of the initial allocation has been expended. The balance will be re-assigned based on the % sales of each retailer at that time.</i></p>

3. INFORMATION TO BE PROVIDED WITH EXPRESSION OF INTEREST

The following information is requested with the EOI:

- Registration certificate of the business in the Cook Islands
- Completed Questionnaire (attached)

For further Information, please contact:

Terekino Vaireka, National Project Coordinator, terekino@oyster.net.ck , Phone - 54990

Felix Gooneratne, International Consultant, fgooneratne@iiec.org

RED-OPM Contact – Tangi Tereapii, tangi@pmoffice.gov.ck , Phone – 29300

Submission of EOIs:

Director, REDD
Office of Prime Minister
Rarotonga, COOK Islands

Attachment

Name of Retailer	
Address	
Contact Person	
Telephone No:	

INFORMATION OF SPLIT TYPE AIR CONDITIONERS PROPOSED FOR THE PROGRAM

Brand	Model No:	Capacity	Star Rating	Energy Consumption (kWh/yr)	Proposed Retail Price Range (NZ\$)	Subsidy Requested (NZ\$/unit)