

QUARTERLY PROGRESS REPORT¹

Fourth Quarter 2008



- 1. Country:** Cook Islands, Fiji, Kiribati, Nauru, Niue, Papua New Guinea, Samoa, Solomon Island, Tonga, Tuvalu and Vanuatu
- 2. UNDP Award ID:** 00044633
- 3. Project Title:** Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)
- 4. Implementing Partner:** Secretariat of the Pacific Regional Environment Programme (SPREP)
- 5. GEF Implementing Agency:** United Nations Development Programme (UNDP)

¹ This report is based on the PIGGAREP 2008 work plan and budget that was agreed to at the Inception Workshop of November 2007 and subsequently endorsed by the Project Steering Committee Meeting of 18 March 2008.

6. Period Covered: 1st October – 31st December 2008

7. Summary of Overall Project Progress:

The general progress during the quarter was satisfactory, particularly on the monitoring and evaluation activities, progress with in-country activities and the several collaborative efforts that PIGGAREP made with other agencies and related renewable energy initiatives in the region.

Collaborations

The project's logical framework (LFA) was retrofitted during the quarter by the PIGGAREP Project Management Office, the UNDP Multi-country Office in Samoa and the UNDP Regional Centre in Bangkok.

The first multipartite review (MPR) meeting of the PIGGAREP was completed. The MPR resulted in the endorsement of the project's first Annual Project Report / Project Implementation Report (1 July 2007 to 30 June 2008), the adoption of a first draft 2009 Work Plan and Budget as well as the retrofitted LFA. The MPR was held jointly with the Inception Phase meeting of the International Union for the Conservation of Nature's (IUCN) Energy, Ecosystem and Sustainable Livelihoods Initiative.

The conduct of a *Financial, Economic and Environment Impact and Institutional Assessment of the Mango and Mo'unga'one Rehabilitation Project in Tonga* was completed. This is part of collaboration with IUCN where PIGGAREP is funding the feasibility study while IUCN is funding the hardware and their installations. The study was conducted by local experts and guided by the PIGGAREP Project Manager. The tender for the supply of the hardware equipments for this project was made during the quarter. The tender was reissued since only one tender was received by the original deadline.

PIGGAREP was able to support the Pacific Power Association's and the e8's Renewable Energy Workshop in November 2008. This workshop was only for power utility engineers and technicians but PIGGAREP funded a participant each from the Kiribati Solar Energy Company and the Ha'apai Solar Electricity Incorporated in Tonga.

PIGGAREP also supported a biofuel conference that was conducted by SOPAC and the SPC in November 2008 by funding part of the travel costs of the participants from the Solomon Is and Vanuatu.

Discussions were held with a representative from UNIDO on possible areas for collaboration as part of their planned renewable energy activities in Samoa and the Solomon Is.

Other PIGGAREP-funded Country Activities

The topographic survey of the Kiiikii wind farm site at Rarotonga was completed during the quarter. The findings from this survey concluded that it is not feasible to construct an access road on the only suitable ridge within the land identified to service the proposed wind farm. It also concluded that in the ridge proposed for the wind farm it would not be possible to construct platforms for any of the recommended 275 kW turbines. Given these, it would not make sense to proceed to the geotechnical survey phase of the consultancy. Through the recommendation of the

Board of the Te Aponga Uira Varovaro, both SPREP and the consultant agreed that the study should end with the topographic survey only.

The call for proposals for the conduct of a renewable energy modelling study in Niue was launched. By the deadline, only one proposal was received. It was agreed to re-launch the call for proposals. By the end of the second call for proposals, one additional proposal was received but Niue has decided to postpone this activity to some other time in the future.

The contract for the wind monitoring at Nauru was signed with Factor 4 of Germany during the quarter. Problems were experienced with transferring the initial payment to Germany and this has further delayed the commencement of the field work planned for early 2009. The new date has now been set for March 2009.

No further progress was made on the Kiribati RESCO Manager project. It was not possible to sign the contracts with the Kiribati Solar Energy Company's selected consultants as the KSEC appeared not to be in total control of this initiative. However, the Local Advisory Project Committee for the UNDP-funded component of the RESCO Manager unanimously approved the project document with minor changes to be added to the existing Project Document and new additional annexes included which incorporate the Terms of Reference (ToR) for the Technical Assistants. As a way forward, it has been suggested to the KSEC that the ToRs for the PIGGAREP-funded components be reviewed simultaneously with UNDP's before the drafted contracts can be reviewed and signed.

The call for proposals for the conduct of the Talise Hydropower study was launched during the quarter following the endorsement of the Project Activity Summary by the Project Steering Committee. The deadline for the submission of proposals is January 31st 2009.

The Third Phase of the Sarakata hydropower project at Vanuatu is a key co-financing activity to the PIGGAREP. The construction of the third phase has just been completed. PIGGAREP provided support to this initiative by funding the participation of the Vanuatu Energy Planner at a commissioning training at the project site.

Baseline and Co-financing Activities

A significant number of activities were carried out during the quarter. These were particularly in Fiji, Solomon Is and Vanuatu. Details can be seen in the Progress per PIC below:

Other Meetings

The Project Steering Committee completed its fourth meeting during the quarter on November 14th 2008.

PIGGAREP participated in the Pacific Climate Change Roundtable (PCCR) meeting and led the discussions on mitigation. PIGGAREP also made a presentation to a media workshop on climate change that was held concurrently with the PCCR.

Funding Proposals

The PIGGAREP PMO completed renewable energy funding proposals / concept notes to be considered under the Japan Pacific Islands Development Cooperation Fund, the US Pacific Island Fund for Small Development Grants and the European Union's EDF 10. The EDF 10 concept note is on Enhancing the Energy Security of the PICs (EESPI). The EESPI has been shortlisted as a High Priority Concept Notes" for further development and inclusion in the 2009 Pacific Annual Action Programme and to be merged with SOPAC's Regional Integrated Approach to Improving Energy Security and Sustainability for a total budget allocation of 9 million Euros. The full proposal for this merged project is to be submitted by 30 June 2009.

The Renewable Energy and Energy Efficiency Partnership (REEEP) participated in the PIGGAREP MPR and presented its 7th Call for Proposals. The PIGGAREP PMO was selected to be in the Steering Committee that shortlisted projects to be considered for funding under Australia's AUD 1.5 million donation to the REEEP. Two proposals involving a partnership between the PIGGAREP and the Global Sustainable Energy Solutions (Capacity Building in EE and RE Training & Establishment of the Pacific Islands Sustainable Energy Industry Association & Certification Scheme) have been shortlisted with the full proposals to be completed by 20th February 2009.

The general progress per PIC can be seen below:



Cook Is

The final report on the PIGGAREP-funded *Topographical & Geotechnical Survey* on a possible wind farm site at Rarotonga was received. The report concluded that:

- i) It is not feasible to construct an access road on the only suitable ridge within the land identified in the ToR to service the proposed wind farm, and
- ii) On the ridge proposed for the wind farm it would not be possible to construct platforms for any of the recommended 275 kW turbines and will only accommodate a platform for one of the proposed 100 kW units. Even with major earthworks it would not be possible to construct further platforms for the recommended wind turbines.

The findings of Fraser Thomas was reviewed by the power utility (Te Aponga Uira - TAU) board which concluded that the study should not proceed to the geotechnical survey nor to conduct it at the suggested alternative sites. This study was therefore brought to an end.

The wind monitoring station on Aitutaki was dismantled, transported and installed in Mitiaro. All guy wires were replaced with ones obtained from the USA. A wind energy engineer from Clay Engineering, Fiji was contracted to provide the technical expertise during the installation and testing of the station. He was assisted by one staff from the Energy Division and three from the Mitiaro Energy. The land for the wind power site was provided by the landowners. After a minimum of one year's successful data recovery the station will be dismantled, transported and installed in Mauke. The Energy Division met all costs including dismantling, transportation, replacement parts, installation, wind energy costs and incidentals.

A new wind monitoring system will be procured and installed in Atiu, as this would shorten down the project period (from 3yrs to 2yrs).



Fiji

There is yet to be a PIGGAREP-funded activity in Fiji. The progress with the baseline activities are the following:

208 rural homes were provided with solar home systems for lighting purposes where each house has 3 x 11W and 1 x 7W lights. A jetty on one of the outer islands (Koro Island) was provided with solar lights.

Two staff were offered scholarships to pursue their Masters in renewable energy and sustainable development.

Fiji has signed the cooperation communiqué with the Italian government and submitted five proposals of which three were approved by the Italian Government. These three projects are:

- i) Development of Fiji's Energy Bill – The project will develop a comprehensive Energy Bill that takes into account existing Regulations, Policies (Charters) and Acts (Laws) related to the energy sector. This Bill will be guided by the existing Government policies to ensure that energy sector developments contribute meaningfully to the overall socio-economic development goals of improving the livelihood of all the people. The TOR for the work has been developed and tenders were called.
- ii) Development of Biofuels Standards - The long-term aim is to provide an enabling environment for the eventual establishment of a sustainable National Biofuels Programme, aimed at the widespread application of the technology in all sectors of the country. Although biofuels are used in other countries, utilization in Fiji is sporadic and minimal.

Discussions with the Trade & Standards Department on possible biofuel standards for Fiji have been held and are ongoing. Commenced collating all the background information such as the number of existing vehicles that are biofuel compliant, vehicle fuel use, standards to be used and held discussions with the relevant stakeholders such as Fiji Motor Traders Association regarding biofuel standard.

- iii) Biogas Programme – Ten biogas digesters will be installed in suitable farms to produce gas for cooking and heating purposes. Prior to the construction of the 10 digesters, we carried out a training of trainers workshops were conducted. The training which was for one month was attended by about 17 participants. The participants constructed a digester as part of the training. A Master Builder from South Africa was hired to conduct the training. This aspect of the project was funded from the Department's allocation. The trainees who have undergone the training will be engaged in the construction of the ten digesters.

Sustainable Energy Financing Programme

Fiji signed an agreement with the World Bank for a five-year project that aims to increase the adoption and use of renewable energy technologies (solar PV, pico-hydro and switching diesel

generators to use coconut oil) and energy efficiency measures by encouraging local financial institutions to participate in sustainable energy financing of materials/equipment/installation costs. The project was launched in December 2008. Some of the activities that have been completed include the development of the solar home systems product catalogue or product standards, dissemination of information brochure and the confirmation of six renewable energy retailers and service providers who will be involved in the supply of equipment and installation of projects.



Kiribati

No further progress was made on the Kiribati RESCO Manager project. The contracts are yet to be signed. The Project Document for the UNDP-funded component of the RESCO Manager was approved with suggestions for a review of the ToR for the Technical Advisers. It has been suggested to the KSEC that the ToRs for the PIGGAREP-funded components be reviewed simultaneously with UNDP's before the drafted contracts can be reviewed and signed.

There was renewed interest on the PIGGAREP from the local host agency (Energy Unit) after a period of silence and non participation. A meeting of the country team was convened in December 2008 to review Kiribati's activities for the 2009 work plan.

The PIGGAREP funded the participation of Mr Tebukei Betero, Maintenance and Project Assistant, KSECL at the e8-PPA Renewable Energy Workshop in Nadi 3-14 November 2008. Mr Betero's evaluation of the workshop is attached as **Annex 1**.

KSEC Board approved on 5th November 2008 that monthly electricity fee be increased from AUD 9 to AUD 12 per month effective March 2009. The Board further agreed to extend public awareness campaign until end of February 2009 regarding the new tariff. The Board also agreed that further increase will be implemented by one dollar increase rate annually until a full sustainable fee of AUD 14 per 100Wp SHS/month is achieved.

The revised Mini PV Grid hybrid proposal for Chevalier College in Abemama has been resubmitted to the Italians for approval. The proposal will be considered during the 4th Joint Committee meeting scheduled to be held in New York in early 2009. The project is worth USD 350,000.00

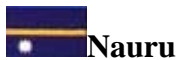
The National Procurement Committee awarded the supply, installation and maintenance of solar water pump project which comprised of 10 solar water pumps to be allocated in ten island communities. The project will be implemented in first quarter 2009. The contract is worth USD 45,000.00

The Ministry of Health and Medical Services and KSEC LTD have formally signed a one year maintenance contract to maintain the existing solar powered vaccine fridge/refrigerator installed in 18 outer islands health centers. The contract will also cover the maintenance of MHMS solar powered VHF radio communication network. The contract is worth USD 27,000.00. KSEC LTD maintenance department have also signed maintenance contracts with other government and non government institutions on various renewable existing renewable based power supply systems.

The EDF10 PIF document for solar energy for outer islands phase II has been approved by European Commission. KSEC Ltd is currently working on the Action Fiche document which is yet to be approved by the Board of Directors of KSEC Ltd. The project will focus to expand the 100 Wp SHS, extended energy supply for commercial use of solar powered appliances, PV Mini-Grid for schools and communities and PV-Grid connected System pilot study on South Tarawa. This project will also provide the KSEC more opportunities to expand its rural electrification service in Christmas, Fanning and Washington islands in the Line Group. The project is worth 4 million Euros.

The Board of KSEC Ltd has approved a Project Manager position which will be established in the 2009 organizational new structure of the company. The move is necessary to improve overall management efficiency needed to further enhance company customer services. The successful applicant will assist the CEO in the formulation of major projects funded by major donors such as EDF10, Italian Governments, UNDP and PIGGAREP.

KIR-EU Health Projects which worth 10 million Euros although focused on the construction of 18 new Health Centers and seventy seven village clinics on the outer islands. This project will also provide energy supply to all the buildings to run water pumps, lighting, vaccine storage refrigerator/fridges and other medical appliances. 10% of the 10 million euros will be spent on solar PV power supply equipments and installation.



Nauru

Several developments took place at Nauru during the quarter. These were mostly on the co-financing activities for the PIGGAREP:

- i) A solar grid-connected system with capacity of 40 kWp has been installed at Nauru College in October 2008. A second site is currently being considered. Selected Electricians participated in the local solar PV installation being part of preparation for future grid-connected PV systems. Details of the installation:

Number of panels: 190

Combined rated power: 39 kW

Expected annual energy production: 60,000 kWh / year

Project hardware costs: AUD 500,000

Estimated annual fuel savings at the Utility: 18,460 litres / year

Estimated cost savings at utility: AUD 24,000 / year

Cost of replacing inverters after 10 years: AUD 38,000

Maintenance cost per year: A\$ 500

Maintenance cost after 20 years (project lifetime): AUD 10,000

Total project cost: AUD 500,000 + AUD 38,000 + AUD 10,000 = AUD 548,000

Payback period (at current fuel prices and fuel consumption at the utility): 23 years.

- ii) Taiwan completed the installation of 60 stand-alone solar systems for household lighting. The project gave the power utility the opportunity to start developing its capacity in solar system installation and maintenance. Three recipients from each district were selected by District members of parliament. The systems each have 130 W panels.

The consultancy agreement for the conduct of the Wind Power Feasibility Study was signed with Factor 4 Energy Projects GmbH of Germany during the quarter. Activities were planned to commence in January 2009 but have been rescheduled to March due to difficulties experienced in transferring the initial contract payment to the consultant's bank account in Germany.



Niue

PIGGAREP's call for proposals to conduct a Network and System Modelling study of the Niue Power Corporation's Power System was launched during the quarter with the 3rd of October 2008 as the deadline. Only one proposal with a value of over USD 137,000 was received. The call for proposals was re-launched and it attracted an additional proposal with a value of NZD 140,000. Before the evaluation of the proposals was made, Niue instructed to postpone this activity to some other time in the future.

REP-5's future activities in Niue will include training and the commencement in May of the installation of a 35 – 55 kW grid connected PV system.

The selection process for the consultancy firm to supply, install and conduct the training in Niue's REP-5 grid-connected solar PV project has been completed. PIGGAREP plans to link in its Taiwan-funded training project on grid-connected RE systems with the REP-5 training in Niue. This joint training activity is tentatively planned for May 2009.

A meeting was held in Suva with regards to Niue's EDF 10 National Indicative Programme. Niue and the EU agreed in principle to pursue strategies in renewable energy efficiency and power supply side under EDF 10. On the energy efficiency side, it was agreed that the main distribution cable system needs to be replaced first if renewable energy penetration is to be maximized, while the supply side is foreseen for further investment in grid connected solar systems complimented with a number of standalone solar water pumps with energy storage capability.



PNG

PNG Sustainable Energy Ltd

Generally 2008 did not conclude well for PNGSEL and most of its planned activities and planned projects were disrupted. The Mabuduwan standalone solar powered mini-grid project did not proceed as planned last year. The project sponsor is yet to make a firm decision on this project. The co-financing activity with PIGGAREP was finalised but pending the project sponsors' approval for funding.

The Sohun hydro rehabilitation project advanced close to having the cooperation agreement signed with the New Ireland Provincial Government, however this did not happen to bring the project sponsor, the Provincial Government and PNGSEL as the implementing agency together.

Other hydro rehabilitation projects including Yagusa and Telefomin have not received any funding approvals and are still pending.

The Aroma trial bio-fuel project went on well but was not supported well by the local community when the lead community leader left the village for studies. The set up is still in the village and PNGSEL is considering options to progress this.

Due to the company's shareholders and management situation most projects did not get any funding approvals.

Appropriate Technology and Community Development Institute (ATCDI)

Implementing ATCDI activities have been slow due to the very slow response in getting partners who would be willing to co-finance some projects that has been submitted to PIGGAREP. The only organisations participating in this programme are ATCDI based at the PNG University of Technology and PNG Sustainable Energy Ltd.

ACTDI was optimistic in getting co-financing from the Italian SIDS but over a year now and there is no response to the numerous emails sent to them.

The Biodiesel project undertaken by the Department of Mechanical Engineering has been progressing with the great efforts of Professor John Pumwa who is leading the research. The Office of Higher Education has donated USD 45,890 and the Department of Mechanical Engineering has committed USD 8119 from its own internal sources towards co-financing.

The literature survey is in progress that will provide a good background understand of the biodiesel production, chemistry involved in the process and the methodology of setting up the test rig. Two 2-kW Diesel Engines have been purchased for comparative performance testing of petroleum diesel and coconut oil biodiesel using departmental funds. It is necessary to test the fuels with a new engine so that the effects of using the different fuels need to be determined. An order has been placed for the purchase of the exhaust gas analyzer using the OHE funds and it is still awaiting arrival from overseas suppliers

A site was located in the DME Laboratory and now preparing experimental set-up is underway. A rectangular steel tank for coconut oil or CNO biodiesel had been made locally on campus and ready for use as shown in the proposed design of the experimental set-up

The Baiteta solar PV project a new Aidpost has been built by the Madang Provincial Administration. An estimated budget to install a solar PV system was sent to the local MP for funding consideration. A funding of US\$1968 is already available from a past project in the village. A PAS has been prepared for this project. For the Buakap Aidpost solar PV project the proposal was sent to the local MP for co-financing but no communication has been received.

Late last year the Simbu Provincial Administration has allocated USD 17,650 towards the rehabilitation of the Bogo School pico hydro power scheme. The budget for the rehabilitation have been sent and ACTDI is waiting for a response.

12 proposals were drafted and submitted to the Global Village Electrification Programme for co-financing of some of the projects. A Workshop was held in Manila in April 2008 for GVEP to extend its operations to the Asia Pacific region.

In December 2008 ATCDI commissioned a 4.5 kW pico hydro unit using the (pump as turbine) system for Paruparu village, which is a mountain community in Bougainville. Community Development Scheme, a programme of AusAID provided a funding of USD 75,169. There is a component to train locals on O&M and we plan to make a submission to PIGGAREP to assist with co-financing for training. This has been considered as the other projects seem to be slow.



Samoa

The PAS for the Electric Power Corporation's wind and hydro resource monitoring interventions was finalised and endorsed by the Project Steering Committee during the quarter. Quotes have already been received for the wind monitoring equipments. These will be ordered in early 2009 with the installation to follow. Preliminary work has been carried out on the Hydro Resource monitoring which included site surveys and village consultations. Final order for the gauging equipment has been submitted to ADB for approval (co-financing as part of the Power Sector Expansion Project).

The Electric Power Corporation announced a possible grid-connected solar PV project to be funded by the Chinese government. This is in addition to a proposal put forward by Meridian Energy (NZ) for a similar grid-connected PV project.

A draft feasibility study has been submitted to the Electric Power Corporation for review as part of the Preparatory Phase of the Solar (PV) Rural Electrification Programme. This programme aims to provide power to unelectrified households either through grid connection for those close to the grid or PV installations. Final Project Document and Investment plan expected to be completed in early 2009.

An ADB-funded technical assistance on establishing a Clean Energy Fund as well as establishing a CDM DNA and identifying possible CDM projects was conducted during the quarter. These are likely to happen in September 2009 (3 QTR 09).



Solomon Is

Even though the Solomon Is did not implement any IGGAREP-funded activities during the quarter, here were some significant advances in the implementation of baseline activities. These were the following, some of which are on-going:

- i) Power-needs assessment of the Rural Community High Schools funded under the Italian Government Fund. So far 12 (out of 17) rural Community High Schools had been assessed. Of these number, two (2) rural Community High Schools had the solar PV Systems installed and in operation. The two schools are: Gela Ilau Community High School in the Central Islands Province (a total of 560 watts) and Kopiu Community High School in Guadalcanal Province (a total of 530 watts). Muana (Isabel Province) and Buruku Rural Community High Schools (Western Province) will be the next to be installed by the first and second week of February 2009. Funding source - Italian Government.



Figure 1 & 2: Solar PV Installation in Staff house (Gela Ilau Community High school)



Figure 3 & 4: Solar PV Installation at the Boys Dormitory (Gela Ilau Community High school)



Figure 5 & 6: Students doing Solar PV installation in an Admin Block (Kopiu Community High School). One student is a lady (black 'T'- shirt with head covered with a scarf)

- ii) Power- need assessment of Lata Hospital (Temotu Province); Kilu'ufi Hospital (Malaita Province); Helena Goldie Hospital (Western Province); Rokera Provincial Secondary School (Malaita); Aola Area Health Centre (Guadalcanal Province) and Pawa Provincial Secondary School (Makira Province) to be powered by RE Source (Solar and Biofuel). Funding source - Solomon Is Government (SIG)
- iii) Installation and commissioning of the California Village Solar PV (340 watts) powered water pumping (underground water). Funding source – SIG.



Figure 7: Commissioning of the California Village Solar PV (340 watts) powered water pumping

These photos in Figure 1 - 7 were provided through the courtesy of Mr Fred Conning of the Solomon Is.

- iv) Procurement of Solar PV equipment for Aola Area Health Centre. The installation commenced in December 2008 and is in progress in January 2009. It will be commissioned on the second week of February 2009. The capacity of this whole installation is 20 x 85 watts (1700 watts or 1.7kW). Funding source - SIG.
- v) Assessment and survey in Baegu/Asofola (North Malaita) on household lighting needs. This is followed by the procurement of Solar PV systems to set up Battery Charging Station for each household to charge their batteries (total capacity is 7 kW). The actual installation will be from January to February 2009. Funding source - SIG.
- vi) Preliminary consultative talks with landowners of HURO (Makira Province) and RUALAE (Malaita Province) Mini-Hydropower Schemes. Landowners show interest in having these two mini-hydropower schemes developed and in operational as soon as possible. Re-feasibility study to get the actual up-to-date cost to develop the two hydro power schemes

will commence in first quarter of 2009. Land acquisition needs to be done and a project proposal would be developed to be sold to aid donors for funding. Funding source – SIG.

- vii) Procurement of RE Technology equipment (one 10 kVA bio-fuel generator; two 1kVA pico hydro turbines; 340 watts solar PV system) for the RE Information Centre for RE Awareness and demonstration for the public. Work on constructing the centre will commence in February 2009. Laboratory for bio-fuel testing will be part of the whole set-up. Funding source - SIG.
- viii) The Tina Hydropower Scheme (in Guadalcanal) is progressing slowly. Preliminary social issues with the landowners and communities living along the access site needs to be resettled and a common understanding be made between the landowners and the Government on some social issues and benefit packages. This is Phase I of the Tina Hydropower Scheme (8 MW). Phase II will be a 20-30 MW hydropower plant on the same river but further upstream. The required task will continue to be implemented in 2009. Funding source – World Bank/Saudi Arabian Government.
- ix) Micro-Energy Solar Company (MESCO) was initiated by Willies Electrical and Solar Power Company which was co-funded by SOPAC and a village (Tau village) in North Malaita was electrified under this program. This is using 2watts LED lighting. Further support from SOPAC is expected in 2009 with funding from REEEP
- x) Apart from these project activities, there are ongoing activities such as preliminary surveys on stream and rivers in the country upon requests from the rural communities. There were request for wind assessment, solar water pumping and Solar Basic Lighting Systems. The Energy Division need to look through these requests and schedule its work program for the year.
- xi) The Italian Government Funded Activity, RE Information Centre, installation of RET in Rokera Provincial Secondary, Lata Hospital, Kilu'ufi Hospital, Helena Goldie Hospital, Pawa Provincial Secondary School solar PV will continue in 2009. Also the required tasks for the Huro and Rualae mini-hydropower schemes will commence in 2009. Baseline funding from Solomon Islands Government and Aid Donors will be used to implement these activities and ongoing activities will be mainly Solomon Island Government funded activities.

Tonga

The conduct of a *Financial, Economic and Environment Impact and Institutional Assessment of the Mango and Mo'unga'one Rehabilitation Project* in the Ha'apai Group of Tonga was completed. This is part of a collaboration with IUCN in which IUCN will fund the hardware equipments and their installation.

Tender for the supply of solar PV components for 64 systems was issued during third quarter. Only one tender was received by the 4th quarter deadline. The tender was reissued during the fourth quarter.

PIGGAREP funded the participation of Mr Makelani Lotukalafi Taufa, Technician, HSEI at the e8-PPA Renewable Energy Workshop in Nadi 3-14 November 2008.

The Australian government has offered Tonga's Chief Energy Planner a scholarship to study for a doctorate on renewable energy beginning in 2009.

The EPU had requested JICA to rehabilitate 350 SHS in the outer islands of Vava'u. The rehabilitation will also involve the establishment of the Vava'u Solar Electricity Society Inc., replicating the experiences of the Ha'apai Solar Electricity Society Inc. A mission to Tonga from JICA on this proposal is planned for January / February 2009.



Tuvalu

The scoping mission as part of the Tuvalu Photovoltaic Electricity Network Integration Project (TPVENIP) that is managed by IUCN was completed. The final report has been received and the call for tender for the supply and installation of a 46 kW grid-connected PV project will be issued in February 2009.

Tuvalu has included a training activity in its 2009 Work Plan to complement this IUCN effort.



Vanuatu

Port Olry Biofuel

The village of Port Olry is being electrified as a prototype project in the context of the rural electrification plan of Vanuatu. The purpose of the prototype project is to validate the suitability of the electrification model in terms of technology and management and to apply the necessary changes to ensure sustainability.

The project is owned by the Port Olry Association who wishes to operate the electricity supply with the technical assistance of and training by the Technical Assistant (UNELCO). The project is being jointly funded by UNELCO SUEZ (5 million vatu), the European Union (5 million vatu) and the Government of Vanuatu (5 million vatu) totaling up to 15 million vatu.

The infrastructure has been constructed in two stages:

For stage one:

- A power station consisting of 1 x 40kW diesel coconut oil generators and spare parts
- 2600 meters of low voltage distribution network to service 100 individual connections
- A public lighting network equipped with 5 x 125 W public lights
- The supply of an electric pump for the pump station

For stage two:

- A back up of 40kW generator to operate on diesel fuel
- 2000 meters of low voltage distribution network to service 100 individual connections
- A public lighting network equipped with 5 x 125W public lights
- The supply of an electric pump for the pump station

However, stage two has not yet been implemented.



Figure 8: Coconut oil filter Coconut oil generator

These photos in Figure 8 were provided through the courtesy of Mr Jesse Benjamin of Vanuatu.

Vareavao Stand-Alone Solar PV Project

Vareavao is a village on Nguna Island, an offshore island on the North of Efate, Vanuatu. Usually it takes 20 minutes by boat from the mainland. UNELCO initiated at its own cost the Vareavao Solar PV project. It is also a pilot project like the Port Olry project which the technology and management system are tested to ensure its sustainability. The project worth approximately 7 million vatu provides solar energy to 26 households. The standard stand alone PV system consists of 50Wp panel and 2 LED lamps for each household. Also included in the package is a community deep freezer. Here, the users of the system have to pay a monthly contribution of 1500vatu. The project was installed and commissioned October 2008.

Kawene Wind Farm

Before the construction of the Kawene Wind farm, wind speed were monitored for a period of time. The construction of the first stage of Kewene Wind farm was completed and commissioned in mid 2007 with just one wind turbine of 275kW. However, its aim is to build 10 more wind turbines by 2010 making the total wind generation contributing to 6% of the total electricity generation. That is the total wind power generation would be 2.75MW by 2010. At present, the aim was already achieved since the 10 wind turbines are already installed and connected to the grid. The overall cost for the project is 750 million vatu. The project will contribute to 8271 tonnes CO₂ savings.

UNELCO Biofuel Project In Port Vila

Port Vila's power generation is running on 15% coconut oil. This is UNELCO's own initiative in trying to mitigate climate change and reduce its dependence on imported petroleum products. However, supply of coconut oil from Santo sometimes is inadequate and quite expensive due to its transportation cost. Currently, UNELCO is trying to establish and manage its own copra mill close to its power station at Tagabe. Their aim is to sign off contracts with copra farmers in the Shefa Province for the supply of quality and sufficient copra. The total cost of the project is yet to be determined from UNELCO. UNELCO's overall aim is to operate on 25% renewable energy by 2010. With that in mind, 8% of their total power generation will be from coconut oil.

EU Energy Facility Biofuel Projects

Vanuatu has been fortunate in having three of its project funded under the EU Energy Facility. The projects are:

- Provision of renewable energy to 2 villages in TORBA Province using locally produced coconut oil;
- Provision of renewable energy to 3 villages in PENAMA Province using locally produced coconut and
- Provision of renewable energy to 4 villages in MALAMPA Province using locally produced coconut oil. Last year July 2008, awareness activities were done on all the project sites.

Last year July 2008, awareness activities were done on all the project sites including the three provinces and by August 2008, the 9 plot of land which the project are to be situated were all marked and surveyed.

The tender for the supply of equipments for power station and copra mill will go out early in 2009. The tender will be evaluated and awarded by end of March 2009. The recruitment of a qualified project manager to coordinate the activities on the three provinces is still underway.

Sarakata Hydropower Project

The installation of the third phase of the Sarakata hydropower project was completed and commissioned on 8th January 2009 since its commencement in March 2007. The capacity has been increased from 600kW to 1200kW. The water canal is still to be rehabilitated by the Vanuatu side before its official handing over in April 2009.

Geothermal

Vanuatu has huge potential in its geothermal energy. Last year during October there was a group of potential developers who have interest in the Geothermal site at Tagara, North Efate, Vanuatu. Two energy officers were with them during the site visit at Tagara hot springs. From what has been observed, it is likely that the development of a geothermal here will be technically viable except for the financial aspects of it. One of the main hiccup pertaining to the geothermal development in Vanuatu is the Geothermal Act which doesn't give guarantee to developers that once they drill and find the source, they will also be able to construct and generate.

Commissioning of the Sarakata Hydro Project Phase 3 took place during the quarter. This was conducted together with a training for officers from the power utility (UNELCO) and the Energy Unit. PIGGAREP funded the participation of the officer from the Energy Unit. The training was from 16 December 2008 – 5 January 2009.

Regional

The Project Manager participated in the UNFCCC-UNIDO Workshop at Vienna on preparing technology transfer projects for financing.

The Project Manager also participated in the Pacific Climate Change Roundtable meeting that was held in Apia. The Project Manager gave a presentation on renewable energy to a media training workshop that was held concurrently with the PCCR.

Drafted 2 project proposals (PURE SIS TOUR NORTH & PURE SIS TOUR SOUTH) worth USD 100,000 to be submitted to the Japanese government-funded Pacific Islands Development Cooperation Fund, administered through the Pacific Islands Forum Secretariat. The projects are about the productive utilisation of renewable energy to promote eco-tourism in the northern and southern SIS.

Two project concepts worth 200,000 Euro was submitted as a joint project with the Global Sustainable Energy Solutions to the REEEP's 7th global funding round and both have been shortlisted for further development.

Drafted a 5 million Euro EDF 10 concept note for the EDF 10 Regional Indicative Programme (RIP). The restricted call for proposals was opened on 4th November with a closing date of 5th December 2008. There is 95 million Euro available in the RIP and its second focal sector is on Sustainable Management of Natural Resources and the Environment - €40 million. The proposal has been shortlisted as a High Priority Concept Notes for further development and inclusion in the 2009 Pacific Annual Action Programme and to be merged with SOPAC's Regional Integrated Approach to Improving Energy Security and Sustainability for a total budget allocation of €9 million. The full proposal for this merged project is to be submitted by 30 June 2009.

Participated in the Second National Communication Technology Needs Assessment stakeholder consultation workshop of Samoa on 4th November 2008.

Met with Ms Karen Bernard of the UNDP Pacific Centre in Suva on 4th November about the prospect for a Pacific-Caribbean south-south cooperation program.

Conducted the MPR: 10-14 November 2008

Conducted PCC 4 on 14 November

Met Mr Morten Sondergaard of Danish Energy Management regarding the ADB TA on CDM and Clean Energy Fund (CEF). ADB loans USD100 million to Samoa for Power Sector activities. Part of Samoa's repayment goes into the CEF. Projects can then be considered under CDM and/or the CEF. Danish Energy Management will also identify possible CDM projects in Samoa in Renewable Energy.

8. Specific Outputs/Results Achieved (As per quarter work-plan):

The Specific Outputs / Results achieved during the quarter, as per the overall PIGGAREP Immediate Objectives / Outcomes and Indicators are covered in Table 1 below:

TABLE 1: REPORT ON 4 QTR ACTIVITIES BY KEY PROJECT OUTCOME

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
IMMEDIATE OBJECTIVES/OUTCOMES 1: Improved knowledge about RE resources potential and increase the number of successful commercial RE applications on the ground			
INDICATOR: At least 10 resource monitoring studies completed by 2010. At least 3 RE projects rehabilitated / upgraded by 2011			
CK-11: MAM Wind resource assessment	5,000	<p>Supposed to continue from 3 QTR.</p> <p>The wind monitoring station on Aitutaki was dismantled, transported and installed in Mitiaro. All guy wires were replaced with ones obtained from the USA. A wind energy engineer from Clay Engineering, Fiji was contracted to provide the technical expertise during the installation and testing of the station. He was assisted by one staff from the Energy Division and three from the Mitiaro Energy. The land for the wind power site was provided by the landowners. After a minimum of one year's successful data recovery the station will be dismantled, transported and installed in Mauke. The Energy Division met all costs including dismantling, transportation, replacement parts, installation, wind energy costs and incidentals.</p> <p>A new wind monitoring system will be procured and installed in Atiu, as this would shorten down the project period (from 3yrs to 2yrs).</p>	A PAS has yet to be developed.
FJ-1: Hydro resource assessment in the upper Navua River Areas	500	<p>Was to have started 1QTR 08 and continue through the whole year.</p> <p>Co-financing is from the DoE's hydro and biogas development budgets.</p>	PIGGAREP support has been modified for the 2009 work plan.

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
		<p><i>Hydro Resource Assessment:</i> Survey of eight hydro sites (Waivaka; Wainawaqa, Nauluvatu, Nacula, Vugalei, Nabalasere, Namalata, Namako.</p> <p>Installation of monitoring station and monitoring of hydro resources for 3 years</p> <p>Detail designing of 2 micro hydro Projects (Buca & Naikorokoro)</p> <p><i>Establishment of Biogas Market:</i> Master Biogas Builder to train the trainers on the construction of digesters.</p>	
PN-11: PIGGAREP - PNGSEL - Bismark Energy Ltd and New Guinea Gold Collaboration on Geothermal Energy	70,000		A PAS is yet to be developed.
SI-12: RE Conservation and Efficiency Programmes	200	Energy Office budget for RE activities is to be the co-financing.	Supposed to start in 1 QTR 08 and to run until end the year. A PAS is yet to be developed.
SI-8: RE surveys and assessments for hydro, wind and solar	2,000	Energy Office budget for RE activities is to be the co-financing.	Supposed to start in 3 QTR 08 and to run until end the year. A PAS is yet to be developed.
SI-22: Solar system grid connection at SITAFE	2,500	Energy Office budget for RE activities is to be the co-financing.	Supposed to start in 2 QTR 08 and to run until end the year. A PAS is yet to be developed.
TO -12: Wind resources assessments	2,500		A PAS is yet to be developed.
TV-4: Support to TEC's outer island grid connected renewable energy projects	5,000	<p>Installation of the 40 kW grid connected PV system was completed during 1 QTR 08. Project costed approximately USD 412,000.</p> <p>Further grid connected solar PV in the outer islands have been discussed under the IPCP. During the quarter, IUCN launched a scoping mission to Vaitupu to collect relevant information for the call for tenders.</p>	TEC has indicated that PIGGAREP pick up the training activities associated with this project. The exact nature of the training will be finalised based on the IUCN-sponsored study. A PAS will then be drafted accordingly.
VU-14: Review of the	9,000	Talise has been proposed and	The PAS was endorsed by the

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
2002 Talise Mini Hydro Feasibility Study		approved for funding under the IPCP.	PSC and the call for proposals was launched during the quarter.
On the job training on the operation and maintenance of the Sarakata Hydropower Project. Also includes commissioning of the 1200 kW Sarakata hydropower project.	2,100	The Sarakata Hydropower project was funded by Japan International Cooperation Agency (JICA). It was commissioned early January 2009 with a total capacity of 1200 kW	The PAS was approved by PSC and 75% of the fund was already released. Awaiting the training report before the reimbursement of the travel expenses and the remaining 25% for the DSA.

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
IMMEDIATE OBJECTIVES/OUTCOMES 2: Expansion of the market for RET applications			
INDICATORS: At least one RET company in 3 PICs by 2012, At least 100 MW of additional RE-based energy systems installed by 2015, 1 million litres of copra oil use as fuel by 2012, 4 feasibility studies completed by 2010 and 2 RE-grid connected projects by 2012			
KI-12: Feasibility study on PV-grid pilot project at SEC Headquarter.	9,000	Funding will be provided in the EDF10 financing agreement. EDF10 Action Fiche draft document completed but not yet approved by EC.	Was to have started on 3 QTR 08 and continued to the 4 QTR 08. A PAS is yet to be developed.
SA-14: RE and related products Development & promotion annual programme	10,000		A PAS is yet to be developed.
SA-15: 2.4.3 (2.1.2, 5.3.1, 4.3.1) - prefeasibility studies on identified projects for 1 potential source identified in 2.1.1	5,050		A PAS is yet to be developed.
SI-11: Support to investment Development Projects	1,000	Energy Office budget for RE activities is to be the co-financing. New govt budget (key co-financing) was tabled in Parliament in March 2008 and still no advice from the Solomon Is on the outcome.	Supposed to have started in 1 QTR 08 and to run for the whole year. A PAS is yet to be developed.
SI-17: Feasibility study of economic of scale of production/use of coconut oil /bio-fuel as fossil fuel substitute in power generation in outer islands SIEA power stations.	2,000		Supposed to have started in 2 QTR 08 and to run for the rest of the year. A PAS is yet to be developed.
SI-18: Feasibility study of solar Grid interactive	1,000		Supposed to have started in 2 QTR 08 and to run for the rest

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
system for National Referral, Lata, Kira Kira, Auki, Malu'u, Gizo, Tulagi and Helena Goldie Hospitals			of the year. A PAS is yet to be developed.
SI-20: Micro Biofuel Enterprise Development	2,415		Supposed to have started in 2 QTR 08 and to run for the rest of the year. A PAS is yet to be developed.
SI-21: Rural Communities Solar PV lightings/water pumping projects feasibility studies and funding	2,000		A PAS is yet to be developed.
SI-26: Micro hydropower prefeasibility study at various sites at Atoifi Hosp., Kounabusu (Kwaio), Manawai (upgrade), Masupa'a, River Side and Rara village, all in Malaita	1,000		Supposed to have started in 2 QTR 08 and to run for the rest of the year. A PAS is yet to be developed.
SI-27: Biofuel Study & Development	1,000		Supposed to have started in 2 QTR 08 and to run for the rest of the year. A PAS is yet to be developed.
TO-15: Demonstration of the viability of copra oil for remote islands electrification	5,000		A PAS is yet to be developed.

4 QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
IMMEDIATE OBJECTIVES/OUTCOMES 3: Enhancement of institutional capacity to design and implement RE			
INDICATORS: At least one RE project designed/implemented by local experts in 4 PICs by 2012 At least ten energy offices have established national energy coordination committees, have clear mandates, strategies and action plans by 2012			
FJ-7: Holistic training provided for staff members of the Energy (economics, accounting, policy, management, and other technology related training)	10,000		Supposed to have started 1 QTR 08 and run through the whole year. Was the top priority project but Fiji DoE advised that this activity has been reprioritised. A PAS is yet to be developed.
KI-16: Migrating RESCO Manager to an open source platform.	7,000	The Local Advisory Project Committee for the UNDP-funded component of the RESCO Manager unanimously approved the project document with minor changes to be added to the	Was to have started 2 QTR 08 and continued through to 4 QTR 08. A draft PAS was prepared, reviewed and endorsed by the PSC. Consultancy agreements had been drafted but have not been

4 QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
		existing Project Document and new additional annexes included which incorporate the Terms of Reference (ToR) for the Technical Assistants.	agreed to and signed.
NI-4: Capacity Building, NPC/Private Sector	2,000		Supposed to have started 1 QTR 08 and run through the whole year. A PAS is yet to be developed.
NI-6: Energy Coordinator / AFO	3,750		Was to have started 1 QTR 08 and run through the whole year. A PAS is yet to be developed .
SA-5: Establish the Designated National Authority (DNA) for CDM activities	2,500	ADB-funded power sector expansion programme. This ADB-sponsored technical assistance began during the quarter and the PIGGAREP PMO was consulted in relation to CDM initiatives in the region.	PIGGAREP value-added activity is to be finalised with the Electric Power Corporation. A PAS is yet to be developed.
SI-14: Setup of RE Unit	2,000	Energy Office budget for RE activities is to be the co-financing. New govt budget (key co-financing) was tabled in Parliament in March 2008 and still no advice from the Solomon Is on the outcome.	Was to have started 1 QTR 08 and run through the whole year. A PAS is yet to be developed and this activity may benefit from the completed study in Tuvalu.

4 QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
IMMEDIATE OBJECTIVES/OUTCOMES 4: Improvement of the availability of funding for existing and new RE projects			
INDICATOR: At least US\$100 million of new investments in RE by 2015			
SA-6: 2.2.5 Build capacity in CDM process and implementation	5,000	A Project Management Unit has been set up at the Electric Power Corporation as part of the ADB-funded power sector expansion programme. ADB has begun with a consultancy study on the establishment of a Clean Energy Fund and establishing a CDM DNA in Samoa.	The incremental activities have not been defined and a PAS is yet to be developed.
SA-7: Establish a Clean Energy Fund	2,500	ADB has begun with a consultancy study on the establishment of a Clean Energy Fund and establishing a CDM DNA in Samoa.	The incremental activities have not been defined and a PAS is yet to be developed.

4 QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
SA-8: 2.2.8 Build capacity in Clean Energy Fund operational processes	5,000	ADB has begun with a consultancy study on the establishment of a Clean Energy Fund and establishing a CDM DNA in Samoa.	The incremental activities have not been defined and a PAS is yet to be developed.
SA-18: Develop funding proposals	1,000		Was to have started last quarter. A PAS is yet to be developed.

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
IMMEDIATE OBJECTIVES/OUTCOMES 5: Strengthened legal and regulatory structures in the energy and environmental sectors			
INDICATORS: At least 10 PICs have adopted Energy Policies and Action Plans by 2012. 3 PICs with draft Energy Legislations by 2011.			
FJ-8: Review/adopt/enact relevant policies, frameworks, legislations for RET; Enactment of Fiji's Energy Bill	2,500		Was to have started 1 QTR 08 and run through the whole year. A PAS is yet to be developed.
KI-4: Consultations on the national energy policy and drafting of an action plan	7,000	SOPAC and EPU conducted some preliminary consultations and workshops on a draft national energy policy during 3 QTR 08. Policy has been finalised and submitted for Cabinet endorsement.	A PAS is yet to be developed.
NI-7: Develop renewable energy plans and targets for 2010, 2020 and 2050 <i>Supporting Grid-connected Renewable Energy Systems through Network and System Modelling.</i>	1,500	The tender for the supply of the grid-connected PV equipments and the associated training was launched during 3 QTR 08 and the evaluation was done on 4 QTR 08.	Was to have started 1 QTR 08 and run through the whole year. This activity has been redesignated as <i>Supporting Grid-connected Renewable Energy Systems through Network and System Modelling</i> . A PAS was developed and endorsed by the PSC. The calls for proposals was launched during the quarter. The budget will obviously be much larger than 1,500.
NI-8: Develop/Review fiscal policies to facilitate the achievement of the RE targets / Expansion	3,000		A PAS is yet to be developed.
TO-11: Energy	20,000		A PAS is yet to be developed.

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
Legislation Review			

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
IMMEDIATE OBJECTIVES/OUTCOMES 6: Increased awareness and knowledge about RE among key stakeholders			
INDICATORS: 500 PICs undertake local training on RE by 2012. Comprehensive annual RE awareness programmes in 10 PICs by 2010			
CK-4: Public Awareness Campaigns	2,500		Supposed to have begun on 3 QTR 2008 but it didn't. A PAS is yet to be developed.
CK-13: Exposure visit to the recycling facilities for cooking oil at USP and NZ	5,000		A PAS is yet to be developed.
CK-16: RE Green Award Programme for the tourism sector	5,000		A PAS is yet to be developed.
CK-17: Support to the Committee working on renewable energy standards	750		Supposed to have started from the 1 QTR 08 and continuing throughout the year. A PAS is yet to be developed.
FJ-6: Holistic training provided for Energy staff, rural communities, village technicians and relevant stakeholders of the Renewable Energy sector	10,000		Was to have started 1 QTR 08 and run through the whole year but later reprioritised. A PAS is yet to be developed.
KI-22: Public awareness campaigns.	500	Radio & Newspaper programmes on the solar cooker workshop and monitoring was conducted during 3-4 QTRs, 2008	Was to have started on the 2 QTR 08 and repeated on 4 QTR 08. A PAS is yet to be developed.
NA-2: Information dissemination on renewable energy– all types (paper, radio, TV, leaflets, booklets, educational material) and translation into Nauruan.	2,500		A PAS is yet to be developed.
NA-3: Awareness raising and public education – educational material, information days in all communities, (working with NGOs and	2,500	Tender for the supply and installation of the PV grid-connected systems and the associated training has been launched.	A PAS is yet to be developed.

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
community leaders), school fairs, renewable energy competitions, meetings with government officials, information days for government			
NA-4: Create an 'Energy and Environment' curriculum for the schools	10,000	REP-5 awareness activities are the co-financing. A consultant visited Nauru in Feb 2008 to start designing the REP-5 awareness activities. Report is expected in 2 QTR 2008.	This activity was to have started 1 QTR 08 and to run through the whole year. Has been reprioritised and replaced with a wind power feasibility study.
PN-6: Renewable Energy Training in the four regions of PNG for Development workers (1. Kokopo - New Guinea Islands, 2. Lae - Momase, 3. Goroka - Highlands and 4. Port Moresby - Southern)	3,000		A PAS is yet to be developed.
PN-7: Exposure visit / training attachments visit to (1) CASE in Perth WA, Australia, (2) RPC in Nimbin, Qld, Australia	5,000		A PAS is yet to be developed.
SA-6: 2.2.5 Build capacity in CDM process and implementation	5,000	ADB is conducting a consultancy study on the establishment of a Clean Energy Funds and establishing a CDM DNA.	A PAS is yet to be developed.
SA-20: Development of standards required to meet GHG emission reduction requirements and use of RE for local manufacture and export productions - trainings dissemination	1,000	While not used as co-financing for the PIGGAREP, the Samoa Ministry of Natural Resources and Environment have finalised their GHG inventory as part of their second national communication report. A contract for the production of a technology needs assessment report was signed during the quarter.	A PAS is yet to be developed.
TO-17: RE Awareness Programme	1,500		A PAS is yet to be developed.

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
Sarakata Hydro Risk Awareness and Consultation	12,000	The Sarakata Hydropower project was commissioned in early January 2009 with a total installed capacity of 1200kW	A draft PAS already developed

The Project Manager participated in the UNFCCC-UNIDO Workshop at Vienna on preparing technology transfer projects for financing.

The Project Manager also participated in the Pacific Climate Change Roundtable meeting that was held in Apia. The Project Manager gave a presentation on renewable energy to a media training workshop that was held concurrently with the PCCR.

Drafted 2 project proposals (PURE SIS TOUR NORTH & PURE SIS TOUR SOUTH) worth US\$100,000 and was submitted to the Japanese government-funded Pacific Islands Development Cooperation Fund, administered through the Pacific Islands Forum Secretariat. The projects are about the productive utilisation of renewable energy to promote eco-tourism in the northern and southern SIS.

Two project concepts worth 200,000 Euro was submitted as a joint project with the Global Sustainable Energy Solutions to the REEEP's 7th global funding round and both have been shortlisted for further development.

Drafted a 5 million Euro EDF 10 concept note for the EDF 10 Regional Indicative Programme (RIP). The restricted call for proposals was opened on 4th November with a closing date of 5th December 2008. There is 95 million Euro available in the RIP and its second focal sector is on Sustainable Management of Natural Resources and the Environment - €40 million

Participated in the Second National Communication Technology Needs Assessment stakeholder consultation workshop of Samoa on 4th November 2008.

Met with Ms Karen Bernard of the UNDP Pacific Centre in Suva on 4th November about the prospect for a Pacific-Caribbean south-south cooperation program.

Conducted the MPR: 10-14 November 2008

Conducted PCC 4 on 14 November

Met Mr Morten Sondergaard of Danish Energy Management regarding the ADB TA on CDM and Clean Energy Fund (CEF). ADB loans USD100 million to Samoa for Power Sector activities. Part of Samoa's repayment goes into the CEF. Projects can then be considered under CDM and/or the CEF. Danish Energy Management will also identify possible CDM projects in Samoa in Renewable Energy.

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
IMMEDIATE OBJECTIVES/OUTCOMES 7: Effective Management of the PIGGAREP			
INDICATORS: Project Activities are implemented within budget and on time, in close collaboration with other related and parallel activities in the PICs.			
PMO	53,266	<p>The Project Manager participated in the UNFCCC-UNIDO Workshop at Vienna on preparing technology transfer projects for financing.</p> <p>Met with Ms Karen Bernard of the UNDP Pacific Centre in Suva on 4th November about the prospect for a Pacific-Caribbean south-south cooperation program.</p> <p>Met Mr Morten Sondergarrd of Danish Energy Management regarding the ADB TA on CDM and Clean Energy Fund (CEF). ADB loans USD100 million to Samoa for Power Sector activities. Part of Samoa's repayment goes into the CEF. Projects can then be considered under CDM and/or the CEF. Danish Energy Management will also identify possible CDM projects in Samoa in Renewable Energy.</p>	<p>Conducted the MPR: 10-14 November 2008</p> <p>Conducted PCC 4 on 14 November</p> <p>Participated in the Second National Communication Technology Needs Assessment stakeholder consultation workshop of Samoa on 4th November 2008.</p> <p>The Project Manager also participated in the Pacific Climate Change Roundtable meeting that was held in Apia. The Project Manager gave a presentation on renewable energy to a media training workshop that was held concurrently with the PCCR.</p> <p>Drafted 2 project proposals (PURE SIS TOUR NORTH & PURE SIS TOUR SOUTH) worth USD 100,000 and submitted to the Japanese government-funded Pacific Islands Development Cooperation Fund, administered through the Pacific Islands Forum Secretariat. The projects are about the productive utilisation of renewable energy to promote eco-tourism in</p>

4QTR Activities	Budget (USD)	Status of baseline activities	Status of incremental activities
			<p>the northern and southern SIS.</p> <p>Two project concepts worth 200,000 Euro was submitted as a joint project with the Global Sustainable Energy Solutions to the REEEP's 7th global funding round and both have been shortlisted for further development.</p> <p>Drafted a 5 million Euro EDF 10 concept note for the EDF 10 Regional Indicative Programme (RIP). The restricted call for proposals was opened on 4th November with a closing date of 5th December 2008. There is 95 million Euro available in the RIP and its second focal sector is on Sustainable Management of Natural Resources and the Environment - €40 million</p>

An overview of the general progress with each country's progress with its 2008 Work Plan can be seen in **Annex 2**.

9. Challenges/Issues Encountered

There is still the need to address the fundamental issues regarding the slow progress with the implementation of project activities, in particular, the preparations of PAS. In addition is the need for the active participation of countries in the project's reporting and monitoring processes.

10. Solutions Applied (to address issues and challenges)

A PAS / Project Proposal writing workshop is planned for January 2009.

The sponsoring of travels to future PIGGAREP-related events should now be tied to active participation in reporting of national activities to the PIGGAREP PMO.

11. Recommendations for Future Action/Work Plan Quarter 1/2009

In order to keep the length of this report short, please See QTR 4 column of **Annex 2**.

12. Project Finance

The total budget for the quarter was USD 352,931. Total expenditures were USD 280,797 (or 79.6% of the budget) with USD 37,293.96 (13.3%) being PMO-related costs and USD 243,503.05 (86.7%) being for PICs project activities. An analysis of the project finance to the end of the quarter can be seen in the following graphs.

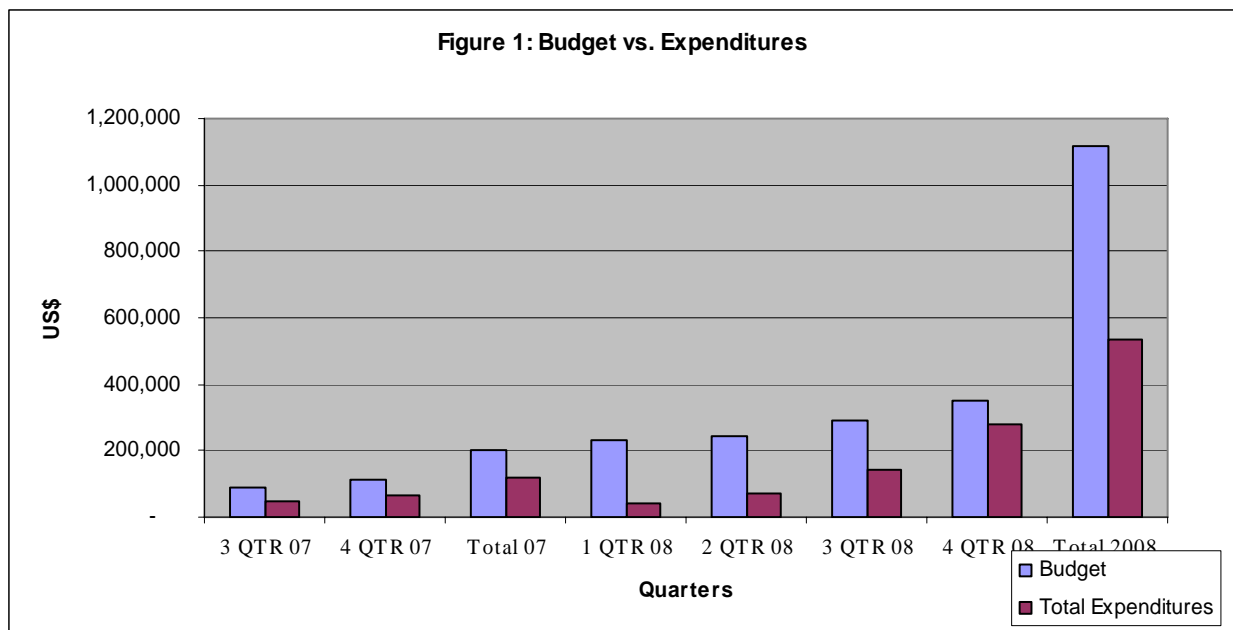


Figure 2: Delivery Rate (expenditures / budgets)

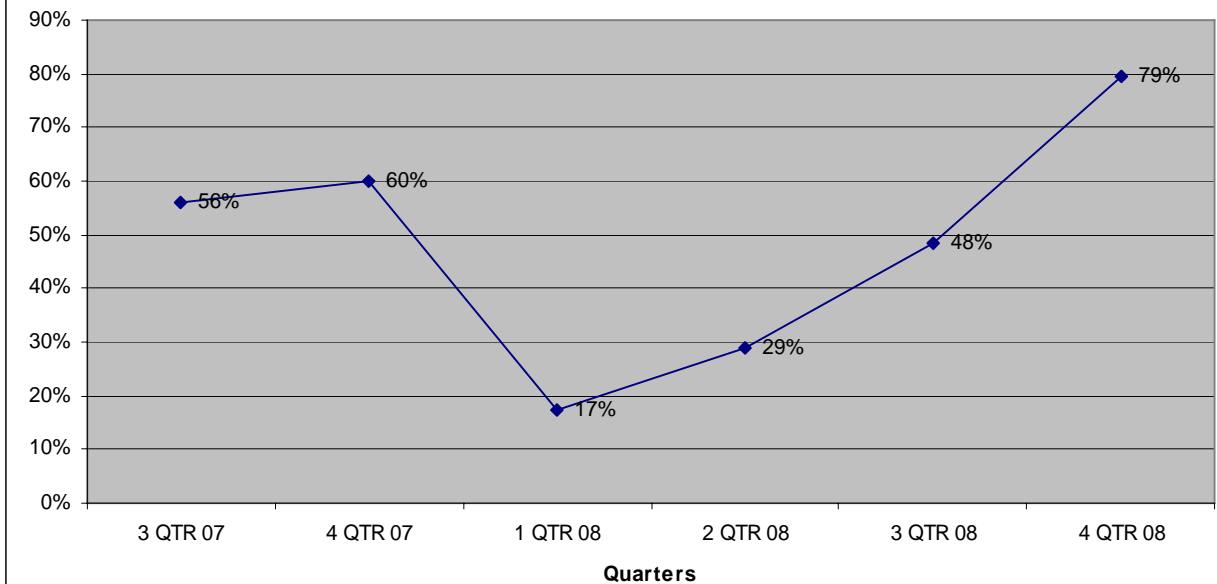
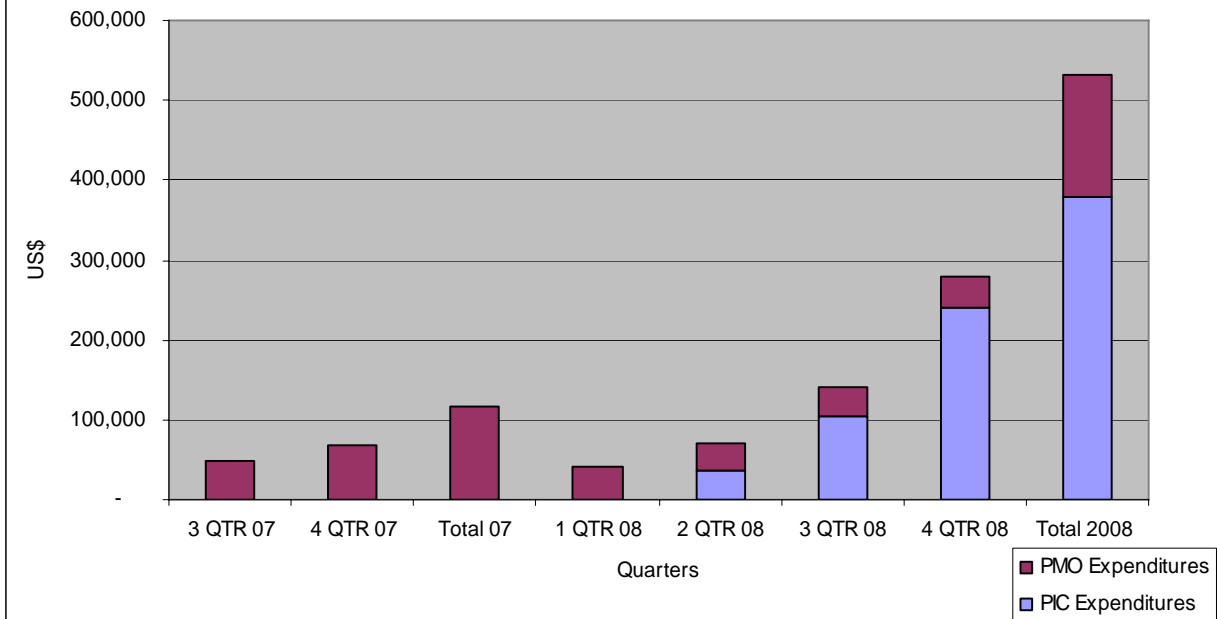
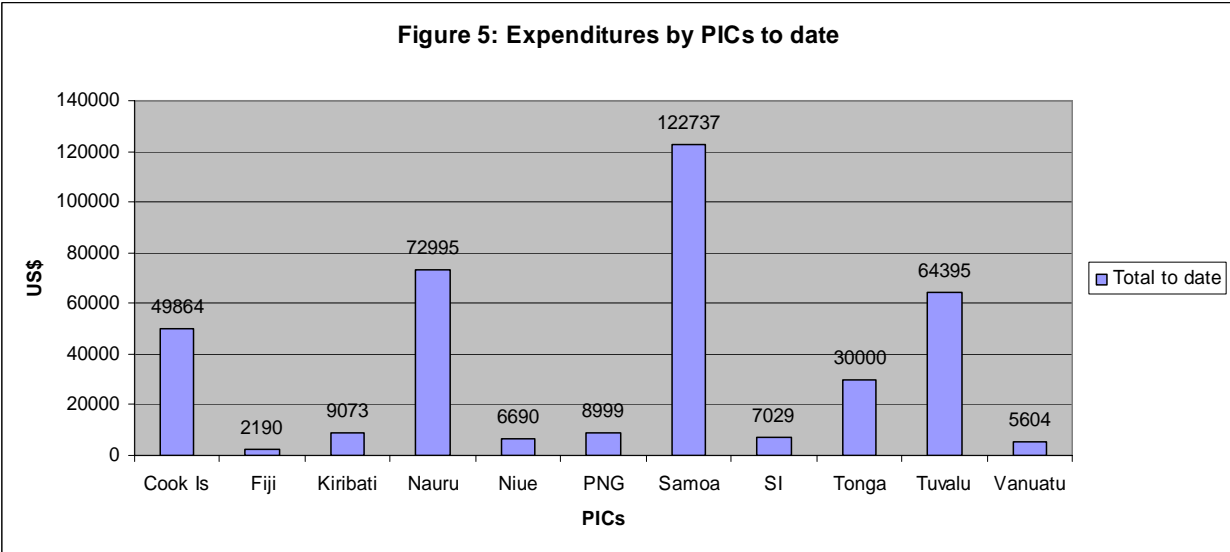
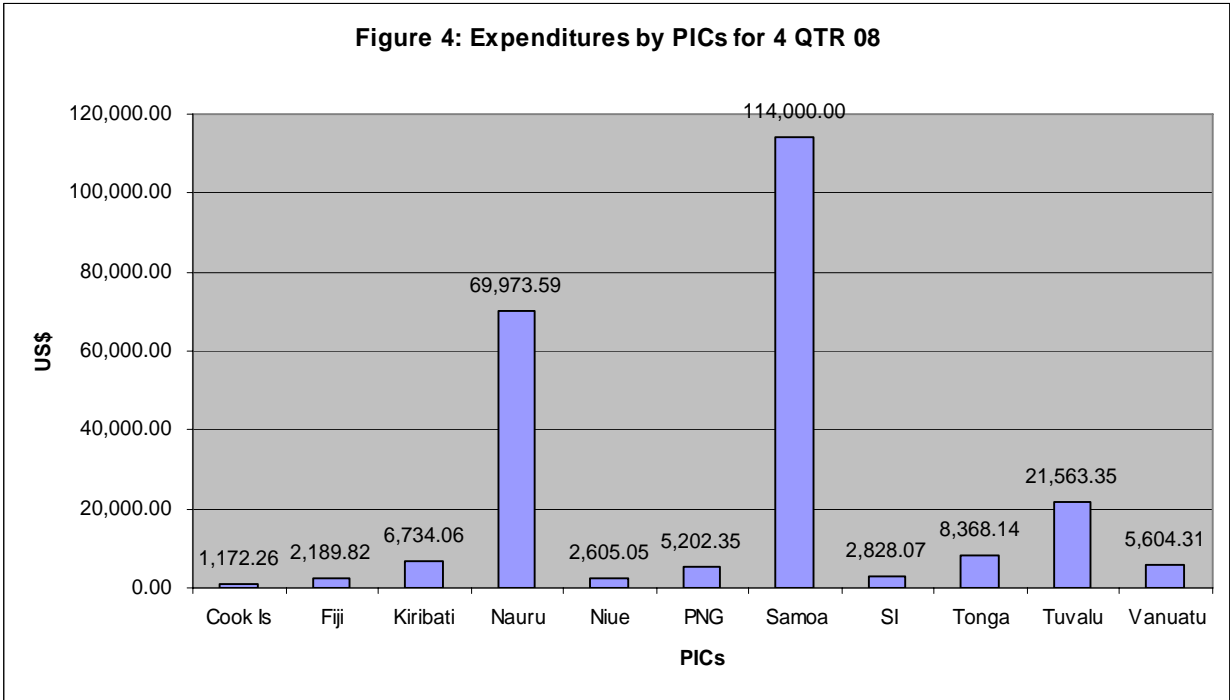


Figure 3: PICs vs. PMO Expenditures





The financial report for the quarter is attached as Annex 3.

13. Report Prepared By: Solomone Fifita
 Project Manager
 16 January 2009

ANNEX 2: REPORT ON GENERAL PROGRES BY COUNTRY'S 2008 WORK PLAN

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
CK1	Mangaia Power System Upgrade	Technical	French and Aust govts, SOPAC and MIC	10,000	10,000			20,000	Based around Vergnet Pacific offer to assist in rectifying the problems at Mangaia.
CK4	Public Awareness Campaigns	Awareness	Energy, Media & NGOs			2,500	2,500	5,000	With support from Environment and its Climate Change activities
CK8	Wind Farm integration study	Technical	Energy / TAU	15,000	15,000			30,000	Will cover participation at the SIS Capacity Building Workshop in 2 QTR.
CK11	MAM Wind resource assessment	Technical	Energy, MET & OMIA		5,000	5,000	5,000	15,000	For Mauke, Atiu & Mitiaro
CK13	Exposure visit to the recycling facilities for cooking oil at USP and NZ	Awareness	Peter Marett				5,000	5,000	To address the environment problems relating to the disposal of used cooking oil.
CK16	RE / Green Award Programme for the tourism sector	Awareness	Energy / Tourism				5,000	5,000	
CK17	Support to the Committee working on renewable energy standards	Technical Awareness	Transport / Energy	750	750	750	750	3,000	<p>Cabinet has endorsed the establishment of the Alternative Energy Committee consisting of the Director, Energy Division; Energy Planner, Energy Division; CEO, Te Aponga Uira; Secretary, Ministry of Transport; CEO, Office of the Prime Minister; Policy Adviser, Office of the Prime Minister; Private Sector (2 representatives);</p> <p>Overall objective is to work closely with the Energy Division in advising the Minister on issues affecting the energy sector in particular renewable energy technologies, and to assist, guide and oversee the planning process of renewable energy technologies.</p> <p>After consultations with the Cabinet, Opposition Members, business sector and the private sector, the Committee received 54 main ideas. These were passed through a sieve and finally to a short list of 12.</p>

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
									1) Introduction of "Net Metering & Post Production"; 2) Regulation for the importation of high electrical appliances; 3) Promotion of energy conservation measures; 4) Self registry for energy technology suppliers, contractors and existing renewable energy demonstration projects; 5) National purchase of renewable energy technologies; 6) Wind mapping for the Cook Islands; 7) Explore carbon trading opportunities; 8) Special homeowners small loans for renewable energy projects; 9) World fridge; 10) Monitoring of displacement gap; 11) Emergency service to deal with multi-day power failure; 12) Development of local expertise and capacity.
	Sub-total Cook Is			25,750	30,750	8,250	18,250	83,000	

General Progress: The general progress with the implementation of the 2008 Work Plan has been rather slow but satisfactory.

Mangaia Wind Power Rehabilitation

At the last quarter of 2007, the company that supplied and installed the Mangaia wind power project (Vergnet Pacific) offered to provide the following assistance:

- VERGNET sends free of charge parts ex-works France to fix the turbines
- VERGNET sends work force to fix the turbines and only charge per diem and airfare
- VERGNET performs another training on this machine, with a special focus on the points and issues mentioned by the Cook Is authorities.

This offer is estimated at USD 150,000 and is currently being considered by the Cook Is authorities. Meanwhile, a Feasibility Assessment of a Mangaia Power Network Extension Upgrade was conducted in late February. Study included a review of documents relating to the power sector on Mangaia, including the Mangaia Power Upgrade 2007 feasibility study carried out by SOPAC. The Study Report is expected in April and this study is estimated at NZD 20,000.

The offer by Vergnet was reconfirmed at Rarotonga in August 2008 during the annual conference of the Pacific Power Association.

In 2008, Bruce Clay & Herb Wade completed a Power Upgrade Feasibility Study. Government is now carrying out the main recommendations:

- o Upgrade power station (new gensets) and its network system; and
- o Upgrade wind power system.
- Wind Turbines
- o Currently 1 turbine is working. The second turbine is down and requires parts.
- o Contact is being made with USP Suva to procure its damaged wind turbine as spare parts.
- o Contact is also being made with Vergnet for the procurement of parts (FOC) required for the operation of both turbines. Vergnet will provide a technician (per diem and travels – Government cost).
- o A shelter is being constructed over the control equipment at the wind farm site.
- o Negotiation will be made with Telecom to rent a communication cable between the power station and turbine so that a direct data link through a Mangaia Power owned modem.

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
Pacific-Italy Cooperation Programme (PICP)									
Cook Is has signed the cooperation's communiqué late in 2007. Four proposals with a total value of USD 1 million were drafted and submitted in 1 QTR 2008. The proposals include:									
<ul style="list-style-type: none"> • Rehabilitation of Mangaia Wind Power • Installation and Commissioning of a Grid Connected Hybrid System (Solar PV & Diesel) for Mitiaro • Development of a National Renewable Energy Plan, 4) Installation and Commissioning of a Grid Connected Hybrid System (Solar PV & Diesel) for Pukapuka/Nassau and • Installation and Commissioning of a plant that provide for the processing of copra for biofuel on Pukapuka. 									
PIGGAREP									
The Cook Is power utility (Te Aponga) participated in the SIS Capacity Building Workshop on Renewable Energy Technology Applications that was held at Port Vila, Vanuatu on 21 – 25 April 2008.									
A PAS for a topographical and geotechnical was prepared and endorsed by the PSC. The surveys has been conducted and a draft report will be available in early October.									
FJ1	Hydro resource assessment in one of the potential hydro site	Technical	DoE	500	500	500	500	2,000	This activity involves the installation of a long term monitoring station at a hydro site that has been deemed viable for further developments
FJ4	Strengthen energy statistics in terms of renewable based data (prices, capacity, supply, potential, etc, etc)	Technical	DoE			5,000	5,000	10,000	This is to fund surveys and workshops to be conducted with all relevant RE stakeholders and also the finalization of the Renewable Energy Database
FJ5	Establishment of the Biogas market	Market	DoE			10,000		10,000	This is to fund formulation of a Biogas Implementation Framework, Policies that should govern the implementation of the Biogas Programme
FJ6	Holistic training provided for Energy staff, rural communities, village technicians and relevant stakeholders of the Renewable Energy sector	Market	DoE	5,000	5,000	5,000	5,000	20,000	This involves the training of the rural communities in terms of project management, maintenance of renewable based projects
FJ7	PIGGAREP National Coordinator (salary and other benefits); Project Post for Energy Statistics	Institutional	DoE	10,000	10,000	10,000	10,000	40,000	This involves the training of the Energy staff in areas that are relevant to the development of the Energy Sector such as economics, accounting, policy, management, etc. Such short courses are offered by USP, TPAF, PSC and international institutions
FJ8	Review / adopt / enact relevant policies, frameworks, legislations for RET; Enactment	Policy	DoE	2,500	2,500	2,500	2,500	10,000	This is to fund the review of existing policies and frameworks for the development of renewable energy

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
	of Fiji's Energy Bill								technologies and the formulation of the Renewable Energy Research, Development Policies and Acts
	Sub-total Fiji			18,000	18,000	33,000	23,000	92,000	
<p>General Progress: The general progress with the 2008 Work Plan has been rather slow at the beginning of the quarter but has picked up some momentum by the end of the quarter.</p> <p>208 rural homes were provided with solar home systems for lighting purposes where each house has 3 x 11W, and 1 x 7W lights. A jetty on one of the outer islands (Koro Island) was provided with solar lights.</p> <p>Two staff were offered scholarships to pursue their Masters in renewable energy and sustainable development.</p> <p>PICP</p> <p>Fiji has signed the cooperation's communiqué and submitted five proposals of which three were approved by the Italian Government. These three projects are:</p> <p>i) Development of Fiji's Energy Bill – The project will develop a comprehensive Energy Bill that takes into account existing Regulations, Policies (Charters) and Acts (Laws) related to the energy sector. This Bill will be guided by the existing Government policies to ensure that energy sector developments contribute meaningfully to the overall socio-economic development goals of improving the livelihood of all the people. The TOR for the work has been developed and tenders were called.</p> <p>ii) Development of Biofuels Standards - The long-term aim is to provide an enabling environment for the eventual establishment of a sustainable National Biofuels Programme, aimed at the widespread application of the technology in all sectors of the country. Although biofuels are used in other countries, utilization in Fiji is sporadic and minimal..</p> <p>Discussions with the Trade & Standards Department on possible biofuel standards for Fiji have been held and are ongoing. We commenced collating all the background information such as the number of existing vehicles that are biofuel compliant, vehicle fuel use, standards to be used and held discussions with the relevant stakeholders such as Fiji Motor Traders Association regarding biofuel standard.</p> <p>iv)</p> <p>Biogas Programme – Ten biogas digesters will be installed in suitable farms to produce gas for cooking and heating purposes. Prior to the construction of the 10 digesters, we carried out a training of trainers in 2008. The training which was for one month was attended by about 17 participants. The participants constructed a digester as part of the training. We also hired a Master Builder from S. Africa to conduct the training. This aspect of the project was funded from the Department's allocation. The trainees who have undergone the training will be engaged in the construction of the ten digesters.</p> <p>SEFP</p> <p>Fiji signed an agreement with the World Bank for a five-year project that aims to increase the adoption and use of renewable energy technologies (solar PV, pico-hydro and switching diesel generators to use coconut oil) and energy efficiency measures by encouraging local financial institutions to participate in sustainable energy financing of materials/equipment/installation costs. The project was launched in December 2008. Some of the activities that have been completed include the development of the solar home systems product catalogue or product standards, dissemination of information brochure and the confirmation of six renewable energy retailers and service providers who will be involved in the supply of equipment and installation of projects.</p>									
KI3	Technical visits to biofuel developments either in Vanuatu and Majuro or Philippines	Technical Awareness	KCMC, PUB, EPU		10,000			10,000	
KI4	Technical visits to PV-Grid developments in Tuvalu.	Technical Awareness	EPU, SEC & PUB	10,000				10,000	Will cover participation at the SIS Capacity Building Workshop in 2 QTR.
KI5	Consultations on the National Energy Policy and drafting of an Action Plan	Policy	EPU, MELAD, MISA				7,000	7,000	Rupeni and Kireua and Richard conducted two days workshop (consultation with stakeholders on a proposed Energy Policy on 4 & 5 August

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
KI10	Refresher technical training following the EDF 8 OI electrification project.	Technical	SEC			10,000		10,000	
KI12	Feasibility study on PV-grid pilot project at SEC Headquarter.		SEC, EPU, PUB			9,000	9,000	18,000	
KI15	Training component related to the installation of the new RESCO Manager		SEC			17,000		17,000	
KI16	Migrating RESCO Manager to an open source platform.		SEC		6,000	6,000	7,000	19,000	
KI22	Public awareness campaigns	Awareness	EPU, MELAD & media		500		500	1,000	Awareness raising activities linking RE projects to mitigating potential to climate change, and their benefits to environment and economy
	Sub-total Kiribati			10,000	16,500	42,000	23,500	92,000	

General Progress: The general progress with Kiribati's work plan has been rather slow but still satisfactory.

PICP

Kiribati has signed the communiqué but has not submitted its proposals.

EU EDF 10

The Financing Agreement was signed in 2007 and a consultant has visited Kiribati on a project identification study.

Solar Energy Company

Activities of the Solar Energy Company are part of the co-financing. A contract was signed with Software Factory Limited of Fiji. This contract will include:

1. Correction of minor problems and bugs still existing in RESCO Manager II
2. Programming the logistics module.
3. Programming the first version of RESCO Remote.

UNDP

The UNDP Multi Country Office in Suva is at the final stages of approving a Maintaining Renewable Energy Systems in Kiribati through Technical Training Project for USD 35,000. The ProDoc is being revised and this project was need to be re-PAC/LPAC this depending on internal decision.

PIGGAREP

Seven PAS have been drafted for KI-11, 13, 14, 16, 17 and 23. This reflects a change in the timing for the implementation of Kiribati's activities. For instance KI-11, 13, 14, 17 and 23 were for later years but their PAS were drafted with the intention that they may be implemented this year.

SEC participated in the SIS Capacity Building Workshop on Renewable Energy Technology Applications that was held at Port Vila, Vanuatu on 21 – 25 April 2008.

NA2	Information dissemination	Awareness				2,500	2,500	5,000	
NA3	Awareness raising and public education	Awareness				2,500	2,500	5,000	
NA4	Create an 'Energy and Environment' curriculum for the	Institutional Awareness	Energy Efficiency Officer (Utilities)	10,000	10,000	10,000	10,000	40,000	Will cover participation at the SIS Capacity Building Workshop in 2

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
	schools		and schools						QTR.
	Sub-total Nauru			10,000	10,000	15,000	15,000	50,000	

General Progress: The general progress with Nauru's co-financing and PIGGAREP activities have been satisfactory

REP-5

- An Energy Officer was recruited in Nov 2007 to implement the actions from REP-5's EE Action Plan for Nauru. Total costs: 40,000 Euro The position is to be funded until 31st Dec 2009. SOPAC will provide a training attachment to the EO during the 2 QTR of 2008.
- A tariff review is to be carried out following the results of a report funded by the ADB. The results will feed into the implementation of prepayments meters and for general energy planning and renewable energy purposes. Total costs: 60,000 Euro. Review to start in Q3 2008.
- A consultant will visit Nauru during the 2 QTR to look at the awareness activities under REP-5. Since it is most likely that REP-5 will cover the activities in Nauru's 2008 Work Plan, a reprioritisation of Nauru's activities was made. The wind power feasibility study has now been advanced to begin in 2008. The PAS was drafted during the PM mission in early February. PAS will be submitted to the PSC 1.
- A 40 kWp grid connected PV system is to be installed at Nauru College. The PV system is to be maintained by the Utility, and monitored by the Energy Efficiency Officer. Total costs: 500,000 Euro. Tender launched. Contract to be awarded by end of April, installation by January 2009.

PICP

Nauru has signed the communiqué for the PICP. Proposals were developed and submitted. These were for improving water supply which would involve solar water pumps and solar powered computers for schools.

EDF 10

Nauru has signed the Financing Agreement for the EDF 10. The consultant doing the project identification study visited Nauru in February 2008.

Taiwan

Taiwan will provide 60 stand alone solar systems to Nauru. These are expected to be installed at the community leaders' houses.

PIGGAREP

Since it is most likely that REP-5 will cover the activities in Nauru's 2008 Work Plan, a reprioritisation of Nauru's activities was made. The wind power feasibility study has now been advanced to begin in 2008. The PAS was drafted during the PM mission in early February. PAS was endorsed by the PSC and the call for proposals have been completed and a consultant identified. Consultancy contract to be signed next quarter.

The Nauru Utility Authority participated in the SIS Capacity Building Workshop on Renewable Energy Technology Applications that was held at Port Vila, Vanuatu on 21 – 25 April 2008.

NI4	Capacity Building, NPC/Private Sector/	Awareness	NPC	1,000	2,000	1,000	1,000	5,000	Will cover participation at the SIS Capacity Building Workshop in 2 QTR.
NI6	Energy Coordinator / AFO	Institutional	NEAP	3,750	3,750	3,750	3,750	15,000	NPC
NI7	Develop renewable energy plans and targets for 2010, 2020 and 2050	Policy	NEAP	1,500	1,500	1,500	1,500	6,000	GON NZAID AusAID
NI8	Develop/Review fiscal policies to facilitate the achievement of the RE targets / Expansion	Policy	NEAP			3,000	3,000	6,000	NPC/GON
	Sub-total Niue			6,250	7,250	9,250	9,250	32,000	

General Progress: The general progress with the co-financing has been satisfactory while the PIGGAREP activities have been slow.

REP-5

- Supply of solar water heaters

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
<p>240 SWHs are to be supplied to Niue and sold to residents at a discount. To be eligible for the discount, residents must hand in their existing electric water heaters. Total costs: 600,000 Euro. Contractors selected. Contract to be signed by end of March</p> <ul style="list-style-type: none"> Grid-connected PV system A grid connected PV system is to be installed on a public building. Capacity of the system is to be 35 – 55 kWp. Total costs: 400,000 Euro. Forecast published, contract to be signed by end of May, installation to be completed by January 2009. Call for tenders was launched during 3 QTR 08. <p>A PAS was prepared for modelling the impacts of the renewable energy penetration into the NPC power network. PAS was endorsed by the PSC and the call for proposals launched.</p> <ul style="list-style-type: none"> Awareness Raising Awareness raising to be carried out in conjunction with the SWH project. Total costs: To be confirmed. Activities has begun and will continue throughout 2008 and 2009. <p>EDF 10 Renewable Energy Programme The financing agreement was signed in October 2007. The consultant doing the design study visited Niue during the QTR 1.</p> <p>PICP Niue has signed the Communiqué but no proposals have been submitted.</p> <p>PIGGAREP No PAS has been drafted.</p> <p>Niue Power Corporation participated in the SIS Capacity Building Workshop on Renewable Energy Technology Applications that was held at Port Vila, Vanuatu on 21 – 25 April 2008.</p>									
PN1	Buakap Aidpost Solar PV System		ATCDI at PNG University of Technology			4,452		4,452	Have vaccine fridge to treat emergencies, etc
PN2	Investigating The Possibility Of Using Coconut Oil As A Substitute Fuel For Diesel Engines		Department of Mechanical Engineering at PNG University of Technology	6,148				6,148	Identify effect on diesel engines and make improvements. Cheap fuel for engines. Growers will have a market to sell their crop & generate additional income.
PN3	Rehabilitation of the Bogo School Micro Hydro Power Scheme		ATCDI at PNG University of Technology	2,673				2,673	Continue to provide electricity for the Health Centre to continue with provision of improved medical services.
PN4	Solar Photovoltaic Project for the Baiteta Village Aidpost In the Madang LLG, Madang Province		ATCDI at PNG University of Technology	2,774		2,000		4,774	Have vaccine fridge to treat emergencies, reduce long distance travel & decrease health problems.
PN5	Clinical Waster Gasifier Project for Asaro Health Centre in the Eastern Highlands Province		ATCDI at PNG University of Technology	1,292				1,292	Completely burn hospital wastes and minimize environmental pollution
PN6	Renewable Energy Training in the four regions of PNG for Development workers (1. Kokopo - New Guinea Islands, 2.		ATCDI at PNG University of Technology				3,000	3,000	Development workers can have basic knowledge to assess projects like micro hydro & solar power

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
	Lae - Momase, 3. Goroka - Highlands and 4. Port Moresby - Southern)								
PN7	Exposure visit / training attachments visit to (1) CASE in Perth WA, Australia, (2) RPC in Nimbin, Qld, Australia		ATCDI at PNG University of Technology				5,000	5,000	Improved performance by staff with improved design of projects & local trainees to benefit greatly.
PN11	PIGGAREP - PNGSEL - Bismark Energy Ltd and New Guinea Gold Collaboration on Geothermal Energy		PNGSEL				70,000	70,000	Will cover participation at the SIS Capacity Building Workshop in 2 QTR.
	Sub-total PNG			12,887	-	6,452	78,000	97,339	

General Progress: The general progress with both the PIGGAREP-funded national activities and the co-financing has been unsatisfactory.

Govt. of Italy and PIC Cooperation Programme

The communiqué has been signed and 8 proposals have been drafted and submitted. The PNG University of Technologies is taking the lead in developing proposals to be funded by the Italian government. They include the following:

1. Baiteta solar PV project (Madang Province)
ATCDI has got K6,000.00 (USD1, 968). ATCDI will submit a proposal to the Italian to cover the Solar modules, batteries, regulator, cables, light fittings, cables, battery enclosure, module
2. The Biodiesel project (Unitech, Lae)
ATCDI will submit a proposal to the Italian to cover a Personalized Biodiesel Production System, Diesel Engine for Testing Fuel, Dynameter plus accessories, Exhaust Gas Analyzer, Engine Performance Analyzer, Wear Particle Analyzer (Model 56), Oxygen Bomb Calorimeter and an expendable supplies & services (including coconut oil).
3. The Bogo MHP project rehabilitation (Simbu)
ATCDI spent USD 6500 to install in 1993. For this project ATCDI will submit a project proposal to the Italian to cover the following Turbine/generator, uPVC pipes and fitting, cement, timber, angle iron and steel bars.
4. Buakap solar PV project (Huon, Morobe)
This is a new project. A new Aidpost building has been built funded by the Rotary Club). For this project ATCDI will submit a project proposal to the Italian to cover solar modules, batteries, regulator, cables, light fittings, battery enclosure and module security frame.
5. The gasifier project (Asaro, EHP)
The gasifier itself was funded by GEF/SGP with a grant of USD 3929. The gasifier will be transported to site and installed. For this project ATCDI will submit project proposals for co-financing from the Italian.
6. Solar PV and micro hydropower training
The training will be conducted in the four regions. For this project ATCDI will submit a proposal to the Italian to cover the local transport, resource materials, copying & printing of lecture materials, refreshments, Certificates and contingencies.
7. ATCDI staff development
This is a project to develop capacity of ATCDI staff by visiting/attachment to two RE organisations abroad for 2 weeks. Organisations selected are CASE in Perth and Rainbow Power Company (RPC) in Nimbin NSW. For the staff development training ATCDI will submit project proposals for support by the Italian.
8. Bago solar PV project (Pomio, ENB).
This is a new project located in the New Guinea Islands region. For this project ATCDI will submit a project proposal to the Italian to cover Solar modules, batteries, regulator, cables, light fittings, Cables, battery enclosure, module security frame.

The project proponent has been frustrated with the lack of communications on this project. Several emails have been sent to the Italians regarding the release of funds for this project. No replies received.

Sustainable Energy Ltd

1. PNGSEL is keen to develop rural power supply using straight coconut oil/biodiesel to provide power supply to remote rural communities, where the cost of petroleum diesel is very high. PNGSEL has an initial budget of PNG K1.7 million to start the production of biodiesel and coconut oil for local generation of power supply to remote villages (Pomio Coconut and Biodiesel Rural Electrification Project). Coconuts in these rural areas have been left unattended because of the high cost of transport and a market available locally will promote coconut tree rehabilitation and grow local economies as well as improve education and health programs through the availability of power supply. Our

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
									<p>model will include the availability of Micro Finance Banking and communications, including an internet cafe.</p> <p>PNGSEL is also implementing a trail bio-diesel project at Aroma. Aroma project will trial the use of small scale biofuel production to provide power to 480 people (80 households). Under this model being tested PNG SEL provides a local coconut plantation owner with oil extraction machinery and arranges a purchase agreement of buy straight coconut oil (SCO) at a set price. SCO will be used to power the adjacent villages. A small scale trial of biodiesel production for local vehicles will also being trailed. Total load is estimated at 144,000kWh, requiring around 50kVA installed capacity. A 13.5kVA genset has also been provided for the plantation.</p> <p>As this is a trial of a model for small-scale sustainable electrification it would be useful if it could be co-funded as a feasibility study.</p> <p>A PIGGAREP support in training and exposure of PNGSEL staff in the production of coconut oil and biodiesel for the generation of rural power supply would add value to our rural electrification programs as we will be looking to roll out these programs throughout the country, wherever there is an abundant supply of coconuts.</p> <p>A sub-section of the above would be the exposure to the technical aspects of processing equipment and the associated advantages and disadvantages of the different types available on the market. Such an exercise would assist greatly in our sourcing of the right equipment and processors from the very beginning instead of half way through the exercise when funding can be a real issue.</p> <p>2. The other area of interest is in Photovoltaic. We have identified areas where Solar Powered Stations would be the only beneficial option for some rural village settings. The budget for the current project for one of the villages in the Western Province (Mabudawan Solar Power Station Project) is about K7 million Kina for a 300KW solar power station. This exercise is a first for our Engineers and some exposure/training on the design and construction aspects of solar power stations between 10 kW to 300 kW would definitely add value to these projects. Again, we will be looking to construct a number of these projects throughout the country and the high initial capital costs involved does not leave any room for mistakes as mistakes can result in the project being abandoned and a lot of money wasted.</p> <p>3. An agreement has been signed between PNG Sustainable Energy Limited, Bismarck Energy and New Guinea Gold for feasibility studies to be carried out on the potential of a geothermal power station at the Sinivit gold mine in East New Britain. The plan is for Bismarck Energy to construct the geothermal power plant and sell electricity to New Guinea Gold the developer of Sisnivit Gold mine.</p> <p>4. Cooperation Agreement between PNG Sustainable Energy Limited (PNG SEL) and New Guinea Ireland Provincial Government (NIPG) is been prepared for signing by January 2008 to pave way for the parties to investigate the rehabilitation of Sohun Micro Hydropower Station and the development of potential hydro and biodiesel resources in New Ireland Province. The investigations would identify, quantify and consolidate the rehabilitation requirements together with other resources and provide options for harnessing and development. Sohun has 231kW generation capacity but current output is only 60-80 kW due to mechanical and low-flow problems. According to previous studies, it is anticipated that a total generation reserve of over 1MW would be developed to support power supply to Namatanai District Headquarter and communities along the peripherals of power generation and transmission routes.</p> <p>PIGGAREP assistance is required in the completion of the rehabilitation study.</p> <p>5. PNGSEL is also interested in investigating the potential for wind power generation in Hula Peninsula. This would aim to cater for the population on the Hula Peninsula, around 11,970 people (1,855 households). Load is estimated at 820kW or 3.5GWh/a. Following a detailed evaluation the aim would be to install around 900kW of wind power and a similar capacity of diesel in a hybrid setup. Hula is expected to be an area of good wind potential based on ground observations and some measurements nearby. Another possibility would be to use larger turbines and interconnect with a nearby 22kV PNG Power line.</p> <p>Assistance is required from PIGGAREP to carry out feasibility study and train local engineers to plan and design wind farms.</p> <p>6. Ormand is a storage hydro in the Eastern side of Central Province. Total installed capacity has been estimated at 5MW for an annual output of 33.8 GWh/a. It has been suggested that it is expandable to 8MW with annual output increasing to 63 GWh/a. The population within range of medium voltage distribution lines is around 39,053 people (6,083 households). This hydro could also be connected to an existing PNG Power 22kV line nearby.</p> <p>Assistance could be co-funding of a feasibility study.</p> <p>7. Kimadan is a 3 stage run of river hydro in the middle of New Ireland Province. Total installed capacity has been estimated at 5.1MW for an annual output of 29.6 GWh/a. The population within range of medium voltage distribution lines is around 30,980 people (6,024 households), while there are some commercial loads including a large Palm Oil plant. The connection of Kavieng town would require around 160km of high voltage lines.</p> <p>Assistance could be co-funding of a feasibility study.</p> <p>PIGGAREP PAS have been developed for all the ACTDI activities for 2008. There was a rescheduling of PNGSEL activities such that the Mabudawan Solar Power Station Design and Training Project (PN 9) has now been advanced to be implemented in 2008.</p>

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
PNG SEL will participate in the SIS Capacity Building Workshop on Renewable Energy Technology Applications that will be held at Por Vila, Vanuatu on 21 – 25 April 2008.									
SA1	2.3.1 (3.1.3) - Capacity Building training needs on RETs (ADB)	Technical	Energy Division, energy stakeholders, EPC, Private sector, MWCSO, SWA,		1,000			1,000	
SA2	2.3.2 (3.1.4) - Training programme on RETs (ADB)	Technical	Energy Division, PSC, Energy Stakeholders, SWA, MWCSO, MNREM, RDIS		1,000			1,000	
SA4	2.4.1 Coordinate the development of an RE programme with the RDIS	Technical	RDIS, Energy Division, MNREM, EPC, MAF, SWA	1,000				1,000	
SA5	2.2.4 Establish the Designated National Authority (DNA) for CDM activities	Technical	Energy Division, MNREM, MWTI, MWCSO, EPC, SUNGO, consultants		2,500			2,500	
SA6	2.2.5 Build capacity in CDM process and implementation	Technical	Energy Division, MNREM, MWTI, MWCSO, EPC, SUNGO, consultants			5,000		5,000	
SA7	2.2.7 Establish a Clean Energy Fund	Technical	Energy Division, MNREM, MWTI, MWCSO, EPC, SUNGO, consultants		2,500			2,500	
SA8	2.2.8 Build capacity in Clean Energy Fund operational processes	Technical	Energy Division, MNREM, MWTI, MWCSO, EPC, SUNGO, consultants			5,000		5,000	
SA9	3.6.1 Consultancy to identify relevant DSM activities	Technical	EPC, Energy Division, MNREM, NUS, consultants				1,000	1,000	
SA10	3.6.2 Develop DSM strategies	Technical	EPC, Energy Division, NEC				1,000	1,000	
SA11	Hydro data collection programme	Technical	EPC, MNREM, Energy Division, Energy Stakeholders	30,000				30,000	EPC
SA13	Assess the practicality of RESCOs in maintaining RE-based energy facilities	Market	Energy Division, EPC, energy stakeholders, private sector, MNREM				10,000	10,000	
SA14	RE and related products Development & promotion annual programme	Market	SAME, Energy stakeholders, private sector, MNREM			10,000		10,000	

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
SA15	2.4.3 (2.1.2, 5.3.1, 4.3.1) – Conduct of prefeasibility studies on identified projects for 1 potential source identified in 2.1.1	Finance	Energy Division, RDIS, MNREM, MAF, MWCSO, NUS, EPC, SWA, consultants			5,050		5,050	
SA16	2.4.4 (2.1.3) Conduct of full feasibility study on identified projects in 2.1.1	Finance	Energy Division, RDIS, MNREM, MAF, MWCSO, NUS, EPC, SWA, consultants				7,100	7,100	
SA17	1.4.1 (3.4.2) Development of an Energy demand and supply database - collection of RE data.	Finance	Energy Division, Statistics, energy stakeholders, EPC, MNREM, MWTI, MOR, Gas companies, Oil companies	825				825	
SA18	2.4.2 Develop funding proposals for 2.4.1	Finance	RDIS, Energy division, MNREM, MAF, MWCSO, NUS, EPC, SWA, consultants		1,000	1,025		2,025	
SA19	1.2.2 (2.1.4) Develop an Energy Bill - RE component	Policy & Regulation	Energy Division, energy stakeholders, MNREM, AG, consultants	1,500				1,500	
SA20	Development of standards required to meet GHG emission reduction requirements and use of RE for local manufacture and export productions - trainings dissemination	Policy & Regulation	SAME, private sector, energy stakeholders, MNREM, EPC, MWTI, MWCSO			1,000	1,000	2,000	
SA21	2.2.1 (4.1.4, 4.2.3, 4.4.1, 5.2.1, 5.3.1) National energy awareness campaign day	Info & Awareness	Energy Division, energy stakeholders, MNREM, MAF, MWTI, MESC, RDIS, NUS, EPC, SSC, SAA, STA, Oil companies, gas companies, SUNGO, SAME, COC, MEDIA		10,000			10,000	
Sub-total Samoa				33,325	18,000	27,075	20,100	98,500	

General Progress: The general progress with the PIGGAREP activities has been slow. The general progress with the co-financing has been satisfactory.

The ADB Power Sector Expansion Project

The project involves a TA - Preparing the Power Sector Expansion Program - that will (i) develop a comprehensive reform program, including a regulatory framework, that would enable private sector participation and enhance the efficiency in the sector; (ii) develop a program to reform the Electric Power Corporation's (EPC) internal business and management procedures to enhance governance and cost efficiency; and (iii) prepare an investment road map to diversify the country's energy resources, meet future load growth, and reduce the burden of diesel

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
									<p>imports.</p> <p>This TA will then lead to 2 very important initiatives: The Power Sector Expansion Project will comprise of (i) three investment components under the Electric Power Corporation's (EPC) investment plan, (ii) assistance to project management, and (iii) technical assistance (TA) programs to (a) improve EPC's financial performance; (b) establish effective regulation of the power sector; (c) establish a designated national authority; and (d) establish a clean energy fund. The investment components include two core and 16 candidate investment subprojects, and a project management component which will be implemented from 2008 to 2015. Component A comprises the Hospital feeder upgrading project-Stage 1 which forms part of EPC's underground cabling program for the transmission network to provide protection from cyclones. Component B comprises the supply and installation of pre-payment meters for all consumers by 2012. Component C comprises five generation and eleven transmission candidate subprojects identified under EPC's investment plan. The proposed ADF IX grant of USD 1.8 million to the Government will ease the macroeconomic impact of the large financing requirements for the power sector expansion project. A loan in the amount of USD 23.9 million is being provided in conjunction with this grant.</p> <p>A TA to implement Samoa's National Energy Policy. The TA will consist of a: <u>Component 1 - Regulatory Reform in the Power Sector</u> Component 1 will support the Government's overarching goal for the power sector to provide sustainable and reliable electricity services to all consumers at affordable prices. Component 1 will help establish the regulatory requirements for the power sector, including the drafting of a new electricity act to govern the sector and amendments to the EPC Act (1980), and establishment of a regulatory body and its roles and functions. <u>Component 2 - Establishment of a Clean Energy Fund</u> Component 2 will contribute to the Government's vision to enhance the quality of life for all Samoans through sustainable energy development. The CEF will promote and facilitate development of clean energy of initiatives for clean energy, environmental improvement, and climate change adaptation. <u>Component 3 - Establishment of a Designated National Authority</u> Component 3 will contribute to the Government's vision to enhance the quality of life for all Samoans through sustainable energy development. <u>Component 4 - Resident Financial Management Advisor to the Electric Power Corporation</u> The financing needs for the power sector and EPC to meet growing electricity demand places substantial requirements on EPC to improve internal financial management controls, accounting and reporting. As part of EPC's forward looking investment plan and need to improve timeliness of tariff adjustments, EPC will commence preparing 5-year financial projections. There is an opportunity to improve the existing tariff structure and introduce bulk power purchase agreements with large consumers to provide incentives for energy conservation and demand-side managements.</p> <p>The Cluster TA includes the following components: <u>Component 1 - Regulatory Reform in the Power Sector.</u> The objectives of Component 1 are to promote good governance, stakeholder participation, and a conducive environment for cost-effective private sector participation and investments. <u>Component 2 - Establishment of a Clean Energy Fund.</u> Component 2 will provide assistance to the Government to establish and strengthen the institutional capacity and technical capability of a clean energy fund (CEF) in Samoa. This will complement the activities under the proposed Power Sector Expansion Project and the proposed Component 3 for the Establishment of a Designated National Authority for utilizing the carbon development mechanism (CDM). <u>Component 3 - Establishment of a Designated National Authority</u> Component 3 will provide assistance to the Government to establish and strengthen the institutional capacity and technical capability of a designated national authority (DNA) in Samoa to promote clean, indigenous and renewable energy through the use of CDM. <u>Component 4 - Resident Financial Management Advisor to the Electric Power Corporation</u> Component 4 will support the Government's overarching goal for the power sector to provide sustainable and reliable electricity services to all consumers at affordable prices by assisting EPC to improve cost effectiveness of power supply. It will support EPC to improve cost-effectiveness of power supply and prepare submissions for timely tariff adjustments to enable the provision of reliable electricity services to all consumers at affordable prices. It will also support energy conservation and demand-side management through the preparation of a new tariff structure and bulk power purchase agreements.</p> <p>A project management unit has been set up at the EPC. The implementation of the TA regarding the establishment of a Clean Energy Fund and a DNA for CDM project has commenced. These are expected to happen in September 2009 (3 QTR 09)</p> <p>PICP MNRE is coordinating this programme, which will be delivered through the IUCN Oceania office in Suva. A USD 600,000 proposal has been developed and submitted. Project is focussing on reducing GHG emission in the transport sector. This has been approved and MNRE reviewed its proposals with the hope of securing more resources.</p> <p>IUCN has identified a project manager for the programme. IUCN will manage the projects activities in Palau, Tonga, Samoa and Vanuatu and possibly RMI.</p>

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
Joint PIEPSAP, UNDP and SOPAC Energy Projects									
<p>The PIEPSAP Project (2004-2008) has assisted Samoa with the following activities: Draft policy statements and strategies produced in September 2005 including renewable energy targets National Energy Policy endorsed by Samoa Cabinet in June 2007 GIS/MIS consultancy for power utility incepted in December 2006 with GIS/MIS system fully operational by 2nd quarter 2007 Cost-shared with UNDP TRAC the Preparatory Phase for the Samoa PV Rural Electrification Programme.</p> <p>Since the PIEPSAP will continue to operate for just another year (up to mid August 2008), discussions of the collaborations between PIEPSAP and PIGGAREP has resulted the suggestion of the following activities to be picked up by PIGGAREP.</p> <p>PIGGAREP's follow-up support to the PIEPSAP's activities will focus on the following activities:</p> <ul style="list-style-type: none"> o 1.Co-operation in developing strategic energy action plan o 2. Follow-up in cooperation with UNDP on the Preparatory Phase for the Samoa PV Rural Electrification Programme including support for the implementation of such PV program o 3. Support for EPC wind energy development including comprehensive feasibility studies (including geotechnical analysis) and identification of funding sources, possibly CDM <p>Furthermore, UNDP, SOPAC, RISOE and the government of Samoa is working on a Upolu wind resource assessment project (USD 32,000). The project will select, install, and operate two (2) wind monitoring stations and after one year with successful minimum data recovery rates analyze the data and assess the wind resource potential on Upolu. The expected main outcome of the Project is to assess the wind resources in Upolu, Samoa.</p> <p>The Government of Samoa through the Electric Power Corporation (EPC) and in cooperation with UNDP and the Danish NGO the Organisation for Sustainable Development have replaced the current diesel generator with photovoltaic (PV) based power systems on Apolima Island. The expected overall outcome is to improve livelihoods through a reliable, effective and environmentally friendly 24-hours power supply for the nine (9) households and one (1) church on Apolima Island including PV based streetlights.</p> <p>In relation to the above, UNDP Samoa, PIEPSAP and SOPAC have undertaken a preparatory phase for the Samoa Photovoltaic (PV) Electrification Programme. The preparatory phase (USD 47,000) will undertake a household survey of un-electrified households in Samoa; determine the resources available and the technical, economical, financial, and institutional feasibility of carrying out a Samoa Rural Electrification Program based on PV; and prepare a Program Document (i.e. investment plan) for a Samoa PV Rural Electrification Program. The expected outcome of the preparatory phase is a properly formulated and detailed PV based rural electrification program to provide the remaining up to 1,200 non-electrified households in Samoa with 24-hours power.</p> <p>Samoa, UNDP and SOPAC have been working on a CocoGen project, looking at th feasibility of using copra oil for power generation. Following discussions between EPC Management, UNDP and SOPAC representatives on 19 July 2007 the Work Plan and Budget for the EPC CocoGen Phase II has been revised to accommodate suggestions and concerns of the EPC Board. The following version acknowledges that given revised maximum blend mixtures of 5% CNO on the one hand and increased supply cost for diesel may change the economics of the project significantly. Revised scheduling also considers the critical nature of the supply chain. In addition an analysis of various options for institutional arrangements for CNO production now takes precedence over technical design issues. The work plan is based on the assumption that EPC's preferred supplier of new generation equipment for Savaii power station will allow a 5% CNO addition to the diesel fuel without negative consequences for warrantees or operational characteristics of the diesel engines.</p>									
PIGGAREP									
The Hydro Data Collection Programme is still under the jurisdiction of the R.E Unit with (some) support from the PMU. The PAS for the wind and hydro resource assessment were approved in November 2008.									
SI3	Economic feasibility study of production/use of coconut oil /bio-fuel as fossil fuel substitute in power generation in rural areas.	Study report compiled and forwarded for actioning	MME, Italian Gov't	4,000	4,000			8,000	Will cover participation at the SIS Capacity Building Workshop in 2 QTR.
SI5	Feasibility study for mini hydropower plants on Rori (Malaita) under Rural Electrification Framework	Economically viability established	SIEA, MME, SOPAC	2,500	2,500	2,500		7,500	To kick-start the Rori Mini-hydro scheme

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
SI6	RE Electricity Pricing Study	RE Pricing Template formulated	MME, SIEA, SOPAC	2,500	2,500	2,500		7,500	High priority. To produce a standardized rural electrification tariff calculation guidelines, and tariff calculation templates that provide pro-forma methods of calculating tariffs using costs based on generation technology, location and other factors, as appropriate.
SI8	RE surveys and assessments for hydro, wind and solar	Survey Reports	MME,SIEA,SOPAC			2,000	2,000	4,000	There are potential sources and sites on the 7 main islands of the Solomon Is for hydro and almost all populated rural communities on the coastal areas of the islands for solar
SI11	Support to investment Development Projects	Financial & Technical	SIG, MME, SIEA, Private Sector	2,000	2,000	2,000	1,000	7,000	
SI12	RE Conservation and Efficiency Programmes	Conservation and efficiency measures in place	MME, SIEA, SIG, SOPAC	300	500	500	200	1,500	
SI14	Setup of RE Unit	TA, Unit in place	SIG, SIEA, (REEEP?)	2,000	2,000	2,000	2,000	8,000	
SI16	Energy Supply/Demand Studies	Study Report	MME, SIEA, (SOPAC?)	300	1,000	1,000	200	2,500	
SI17	Economic feasibility study of production/use of coconut oil /bio-fuel as fossil fuel substitute in power generation in outer islands	SIEA power stations.	MME, SIEA, Private or SOPAC		1,000	2,000	2,000	5,000	
SI18	Feasibility study of solar Grid interactive system for National Referral, Lata, Kira Kira, Auki,	Study Report presented for proper action	MME, SIEA, Private		2,000	2,000	1,000	5,000	

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
	Malu'u,Gizo, Tulagi and Helena Goldie Hospitals								
SI20	Micro Biofuel Enterprise Development	Micro Biofuel development structure	Frelin Enterprise & Fred Conning		2,000	2,000	2,415	6,415	
SI21	Rural Communities Solar PV lightings/water pumping projects feasibility studies and funding	Hardware and then Access to Electricity	MME, SITAFE, Private Solar PV Companies			2,000	2,000	4,000	
SI22	Solar system grid connect at SITAFE	Demonstration	Choice Electrics, Australia, SITAFE		2,500	2,500	2,500	7,500	
SI24	Technical Support to the SITAFE Renewable energy library centre	Technical/resources materials	Australia (OTEN -NSW TAFE)		2,000			2,000	
SI26	Micro hydropower pre-feasibility study at various sites at Atoifi Hosp., Kounabusu (Kwaio), Manawai (upgrade), Masupa'a, River Side and Rara village, all in Malaita	Power base for rural market outlet / industries	PELENA (Renewable Company)		2,000	2,000	1,000	5,000	
SI27	Biofuel Study & Development	Complement Frelin Enterprise & Fred Conning	Pro Solution, (SOPAC?)		1,000	1,000	1,000	3,000	
	Sub-total Solomon Is			13,600	27,000	26,000	17,315	83,915	

General Progress: The general progress has been slow.

PICP

The communiqué has been signed. Proposals were developed and submitted. The proposals to the Italian government are for the electrification of schools and clinics/area health centres located in the rural areas that have no connection to the national grid right throughout Solomon Islands.

Energy Division's Renewable Energy Activities

There was a recent change of government and the budget has not been passed by parliament.

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
SIVEC's RE Development Activities									
PIGGAREP									
PASes have been drafted and commented on by have not been revised and updated.									
SIEA and Willie's Electrical participated in the SIS Capacity Building Workshop on Renewable Energy Technology Applications that was held at Port Vila, Vanuatu on 21 – 25 April 2008.									
TO1	Joint annual committee meetings	Institutional	EPU, HSES & NFSES	6,000				6,000	The joint annual meetings should then lead to the establishment of the National Steering Committee
TO2	Technical evaluation of the solar installations	Technical	EPU, HSES & NFSES	3,000				3,000	Ha'apai's, installed in 2002, is to be evaluated next year while Niuva's, installed in 2006, will be in Year 2 and both on Year 5.
TO3	Training of village water committees and island technicians	Awareness	EPU			6,000		6,000	Training is to be part of the JICA solar water pumping project for Niua-tapu. Also include training for NFF and Ha'apai technicians based on the outcome of the evaluations.
TO09	Training on RE for AMREC	Awareness	EPU & AMREC		5,000			15,000	To cover solar, wind and bio-fuel. To begin early in the project thereby allowing AMREC members to bid for activities in the Italian and EDF 10 projects.
TO11	Energy Legislation Review	Policy	EPU & Crown Law & Consultant				20,000	20,000	A follow-up to the RE Bill. To review existing energy-related legislations and whether they can all be merged into an Energy Bill.
TO12	Wind resources assessments	Technical	EPU	2,500	2,500	2,500	2,500	10,000	To sites will be selected based on the Vergnet wind atlas project which will be completed by Sept 07.
TO14	Biofuel feasibility study	Market	EPU & Waste Mgmt Ltd	10,000	10,000			20,000	Will cover participation at the SIS Capacity Building Workshop in 2 QTR.
TO15	Demonstration of the viability of copra oil for remote islands electrification	Technical Financial	EPU and Island Community				5,000	5,000	To begin after the exposure visit to Vanuatu and other PICs.
TO17	RE Awareness Programme	Awareness	EPU	1,500	1,500	1,500	1,500	6,000	To include production of a RE documentary, establishment of an RE information centre at the EPU and the District Solar Energy Societies, a monthly radio programme and an

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
									annual RE award programme.
	Sub-total Tonga			23,000	29,000	10,000	29,000	91,000	
<p>General Progress: The general progress with both the co-financing and PIGGAREP activities have been satisfactory.</p> <p>PICP Communique has been signed and proposals have been submitted. Three key activities for the Italian funds are:</p> <ol style="list-style-type: none"> 1. The provision of improved lighting for the people of Ovaka, Hunga, Lape, Nuapapu, Matamaka, Falevai, Taunga, Otea, Kapa, 'Olo'ua and Ofu in the Vava'u Group. This will involve a total of 1445 people, 289 households, 11 schools, 2 health centres, 12 community halls, 16 churches and 7 retail shops. 2. The provision of improved lighting for a total of 3 villages in the island of Niuaotupapu [Hihifo, Vaipoa and Falehau] and Lofanga Island in the Ha'apai Group. There are 139 households and 430 people at Hihifo, 83 and 300 at Vaipoa, 78 and 290 at Falehau and 50 and 184 at Lofanga. This component will therefore benefit 350 households and 1204 people in total, in addition to 4 schools, 1 health centre, 4 community halls, 8 churches and 5 retail shops. 4. The third component is intended to strengthen the capacities of the District Solar Electricity Society Incorporated (Niuaotupapu, Vava'u and Ha'apai) to effectively manage their photovoltaic projects. There are currently 169 installed systems at Ha'apai and this will increase to 353 with the inclusion of Lofanga. 290 systems are planned to be installed at Niuaotupapu and 289 for Vava'u with Italian funds. <p>Tonga's activities, as well as Samoa's and Vanuatu's will be managed through the IUCN Oceania office in Suva. A project manager has been identified.</p> <p>Italy has approved the funding of a rehabilitation of the Mango and Mo'unga'one PV projects. A PAS was endorsed by the PSC for the conduct of the feasibility study. The field work for the study was conducted in September.</p> <p>Tender for the supply of solar PV components for 64 systems was issued during third quarter. Tenders were evaluated and the supply contract offered during the fourth quarter.</p> <p>The EU EDF 10 Tonga will receive a total of 5.9 million Euro from the European Union's 10th EDF. This is generally for renewable energy for development and sustainable livelihoods. The Financing Agreement is to be signed in November 2007 during the Forum Meeting in Nuku'alofa. The EU will then send a study team to consult Tongan authorities on project activities to be supported. A consultant doing the project identification study visited Tonga during the QTR 1.</p> <p>At the end of 2008, the EPU requested JICA to rehabilitate 350 SHS in the outer islands of Vava'u. The rehabilitation will also involve the establishment of the Vava'u Solar Electricity Society Inc., replicating the experiences of the Ha'apai Solar Electricity Society Inc. A mission to Tonga from JICA on this proposal is planned for January / February 2009.</p> <p>PIGGAREP 4 PAS has been drafted. In the process, two activities (TO 1 & TO 2) have been merged and finalised for PSC 1.</p> <p>EPU participated in the SIS Capacity Building Workshop on Renewable Energy Technology Applications that was held at Port Vila, Vanuatu on 21 – 25 April 2008.</p>									
TV3	Dissemination of biogas technology introduced by PIEPSAP	Awareness	Alofa Tuvalu			5,000	5,000	10,000	
TV4	Support to TEC's outer island grid connected renewable energy projects	Technical	TEC	5,000	5,000	5,000	5,000	20,000	Will cover participation at the SIS Capacity Building Workshop in 2 QTR.

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
TV5	Study and establishment of a RE Unit at TEC	Institutional	TEC				25,000	25,000	A follow-up to the PIEPSAP-funded base tariff review study. Unit will also look at loss reduction, DSM and fuel substitution
TV6	Training of TEC Outer Islands Supervisors on RE Technology			20,000				20,000	
TV7	Support implementation of Policy and Strategic Action plan	Policy Institutional	Energy			6,250	6,250	12,500	
	Sub-total Tuvalu			25,000	5,000	16,250	41,250	87,500	

General Progress: The general progress has been very satisfactory with both the co-financing and the PIGGAREP activities.

1) The Tuvalu Grid-connected PV project

Installation has been completed and the project has been commissioned. During the commissioning, an on-the-job training workshop was conducted for Tuvalu technicians and engineers.

The Alofa Tuvalu's Amatuku Project

PICP

Communiqué has been signed and a proposal was developed and submitted. The Tuvalu Photovoltaic Electricity Network Integration Project (TPVENI) is for USD 800,000 V systems is expected to bring about a reduction of 184 tonnes of carbon dioxide (CO₂).

TPVENI is designed to deliver the following:

- New Energy Office structure
- Energy Coordinating Committee (ECC) established and terms of reference developed.
- Additional resources secured for the implementation of the Tuvalu
- Training programme for energy staff developed.
- Training conducted.
- Project Officer recruited over the duration of the Italy-Tuvalu Cooperation.
- Training activities and workshops conducted /convened.
- Scoping mission report with clear directions on how to proceed with the
- necessary next phases for the PV integration activities.
- Tender documents finalized and contract signed.
- Equipment delivered to sites.
- Grid connected PV systems installed and commissioned.
- Monitoring and evaluation report available.
- Relevant training /capacity development programme formulated.
- Training conducted.

Completed the scoping mission as part of the TPVENIP. The scope of work for the consultancy will include, but not necessarily be limited to, the following activities:

- Carry out a scoping mission to Vaitupu and accurately assess the actual current power demand and a 10 year projected demand for the Vaitupu grid;
- Estimate operating expenditure of the 10 year period;
- Estimate investment requirements to meet demand;
- Determine the technical feasibility or otherwise of the proposed PV integration system and future expansion;
- Recommend the most proven and appropriate option of PV system to match the Vaitupu grid characteristics base on the current and future demand;
- Estimate the replacement costs per kWh of the major components and anticipated fuel savings from the chosen PV system to match the Vaitupu grid characteristics and other proven PV systems.

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
									<ul style="list-style-type: none"> Identify the appropriate site/location for the installation of the PV system. Provide set of recommendations required for the sustainability of the project based on past experiences of PV system in the Pacific. Prepare tender documents for the design, supply and installation of the recommended PV system taken into consideration the tropical climate in Tuvalu; Liaise closely with the Contractor during the installation of the PV system; Liaise closely with the TEC Engineer designated to the project; and Ensure the TEC Engineer has full advantage of hands on experience available during the scoping mission and the installation of the PV system. Identify training areas required for the sustainability of the project and provide set of recommendations to strengthen the Institutional Capacity of the station. <p>Draft report will be available on the first quarter of 2009.</p> <p>PIGGAREP Activities 2 PAS has been drafted. One has been finalized and implemented during the quarter as part of the commissioning of the PV grid-connected installation.</p> <p>Completed by the study of how best to establish the RE and EE Unit at the Tuvalu Electricity Corporation.</p> <p>TEC participated in the SIS Capacity Building Workshop on Renewable Energy Technology Applications that was held at Port Vila, Vanuatu on 21 – 25 April 2008.</p>
VU5	Vanuatu Hydropower Resource Mapping	Market	Energy Unit, Consultant			5,000	5,000	10,000	
VU6	Feasibility Study of the Tasiriki River hydro resource potential	Technical	EU			10,000	10,000	20,000	
VI11	Review of the Rural Electrification Policy	Policy	Energy Unit, NACCC, SOPAC		6,000	7,000	7,000	20,000	
VU12	Renewable Energy and Energy Efficiency Programmes		Energy Unit, SOPAC, UNELCO			2,000		2,000	
VU14	Review of the 2002 Talise Mini Hydro Feasibility Study		Energy Unit, Consultant		9,000	9,000		18,000	
VU16	Study of the viability of changing fishery freezers to run on RE		Fisheries, Consultant			10,000		10,000	
VU17	Community Awareness		VANREPA, local Theatre Group		1,500	1,500		3,000	
VU18	Identification & Promotion of income generation activities		VANREPA, Peace Corps				3,000	3,000	
	Sub-total Vanuatu			0	16,500	44,500	25,000	86,000	
<p>General Progress: The general progress has been satisfactory. Vanuatu did not have any activity planned for the first quarter, however, it has actively drafted a PAS in preparation for the 2 QTR.</p> <p>The Sarakata Hydro Project</p>									

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		

Sarakata has two 300 kW turbine generators, installed in 1994 and 1995, that supplied 70% of the electricity to Luganville, Santo in 1995. Growth in demand has made it impossible for the hydro generators to meet the peak demand, hence this 3rd phase to install a new 600 kW hydraulic turbine generator. This project will benefit the approx 20,000 residents of Santo.

The Project for the improvement of the Sarakata Hydropower Project (i.e. the third phase) commenced in March 2008. The work included rehabilitation of the water canal and other civil works. Also included in the project was the installation of an additional 600kW turbine generator. The project for the third phase was completed and commissioned early January 2009.

The Sarakata project is owned by the GoV. The project is managed by the Power Utility (UNELCO). UNELCO pays GoV the equivalent of the price of oil saved from generating from hydro at Sarakata. This money goes to the Sarakata Fund which is specifically used to support other rural electrification projects, solar PV and grid-extension, in Vanuatu.

PIGGAREP has supported this project by funding the Energy Planner to participate on an OJT for the operation and maintenance of the Sarakata Hydropower Project during December 2008 to early January 2009.

PIGGAREP will further support by the project by funding the Technical, Socio-economic and environmental evaluation of the Sarakata Hydropower Project after its one year operation since commissioning of its third phase. This evaluation study will be scheduled for 4th Quarter 2009.

The joint Energy Unit and UNELCO EU ACP Energy Facility-funded projects on bio-fuel

On 17 July 2007, the European Commission approved the final selection of proposals that will benefit from grant co-funding from the 9th European Development Fund. From the entire PICs, Vanuatu was the only country with proposals to be funded from this facility. Three out of the four approved projects were joint Energy Unit-UNELCO projects. These include the provision of renewable energy using locally produced copra oil as biofuel to: (1) 4 villages of North East Malekula island, Malampa Province, (2) 3 villages in Ambae Island, Penama Province, and (3) 2 villages of Vanua Lava island, Torba Province.

PIGGAREP will support these projects with the training component. The training will cover both technical and management aspects of the project and also how communities can come up with activities that can stimulate income generation by making use of the electricity provided by the biofuel project. Also it will further support the project with the Market Demand study. The market demand study will identify opportunities and strategies which can boost the local economy of the village given the supply of electricity is sufficient.

At Malampa, the project will bring energy to 660 households, 6 primary schools and one College, 2 dispensaries, in the villages of Lavalsal, Vao, Orap and Wala in the North East of Malekula Island. This will increase the rate of access to energy from 6.8% to 7.8%.

At Ambae, the project will bring energy to 185 households, 1 primary schools, a branch of the University of the South Pacific (USP), 1 hospital and 1 dispensary, in the villages of Saratamata, Lolowai and Longana in East Ambae. This will increase the rate of access to energy from 6.8% to 7.1%.

At Torba, the project will bring electricity to 103 households, 2 primary schools, 1 college, 1 dispensary, in the villages of Sola and Mosine on Vanua Lava Island in the TORBA Province.

PIGGAREP will support these projects with studies to look at the sustainability of UNELCO's copra oil supply line including potential value-added products and the environment impacts of its bio-fuel production and use. This study will also look at potential financial risks to UNELCO's copra oil effort and identify mechanisms which could be used to stabilize copra oil prices. Given UNELCO's 25% RE goal and its current and future RE programmes (as well as others' in Vanuatu), PIGGAREP will support a study of the potential benefits of registering these as CDM projects and building the local capacity to effectively manage CDM projects.

The VANREPA's EU ACP Energy Facility-funded project on wind

The Answer is Blowing in the Wind – Improving access to energy services for the communities of Futuna & Aneityum Islands (Vanuatu) using wind technology is the fourth Vanuatu project to be approved for funding under the EU ACP Energy Facility. The main activities of the project will focus on: i) the installation of wind turbines at key public institutions at communities in Futuna and Aneityum, installation of battery banks with sufficient capacity to enable households to recharge batteries, ii) the establishment of an island focused Renewable Energy Service Cooperative (RESCoop) for the management and maintenance of the systems on both Futuna & Aneityum Islands, iii) the setting up of a billing system for the delivery of energy and the rental of efficient lighting kits and recharge battery 'tokens' to households, aimed at sustaining the RESCoop, iv) the training of selected members on the operation, maintenance, financial management of the installed systems as well as potential energy uses and sustainable energy consumption, and v) the identification and promotion of new opportunities and income-generating activities, training of would-be local entrepreneurs. The final direct beneficiaries are over 1,100 people. Approx. 237 households, 4 schools, several kindergartens, 5 health centres (dispensaries), community governing offices, tourism, fishing and handicraft cooperatives, business centres with access to energy from this project.

PIGGAREP will support VANREPA's wind project in the areas of awareness and the support and identification of income generating opportunities.

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
	<p>PIGGAREP will also provide support to establishing an environment which is conducive to investments on RE in Vanuatu. As such, the Electricity Act will be reviewed to allow private generators to come in and generate RE and sell to the grid. An annual RE and EE programme will be conducted to give due recognition to achievements and innovative ideas in these two areas.</p> <p>PICP Vanuatu has proposed the following activities to be funded under this programme:</p> <ul style="list-style-type: none"> o the development of human resource(s) on the implementation and management of policies, strategies and action plans; institutional strengthening by encouraging the participation of relevant stakeholders including the involvement of rural women; and energy data collation and analysis. All these areas are consistent with and given prominence in the Vanuatu National Energy Policy framework. o rehabilitation of solar PV projects on the islands of Santo and Malekula; and (ii) to progress the proposed Talise River hydropower project on the island of Maewo in Penama province o wind resource assessment programme in the six Provinces of Torba (Sola – Vanua Lava Island, and Gaua Island), Sanma (Port Olry Village – Santo Island), Penama (Ahiwo area – Pentecost Island), Malampa (Norsup area – Malekula island) and Tafea (Ipota – Erromango Island), (White grass area – Tanna Island), Shefa (Tongariki island). <p>Italy has approved the funding of a hydropower generator at Talise. PIGGAREP is to fund the conduct of the feasibility study. Project has been stalled as the discussions with Vanuatu have focussed only on the remuneration package for a PIGGAREP and IUCN local project coordinator.</p> <p>Though the project is stalled due to some conflicts on the remuneration package, the scoping mission for the rehabilitation of the solar project will be commenced sometimes end of this quarter or early next quarter.</p> <p>The call for tender for the Feasibility study for the Talise hydropower project is currently underway and will be implemented towards end of 1st quarter of 2009.</p> <p>AusAID-funded Energy Advisor The Advisor has started on this position. It already 6 months since the Advisor took up this position and has come up with some work plans which will be soon implemented.</p>								
	Grand Total for Year 1 Country Activities:			177,812	178,000	237,777	299,665	893,254	
	PMO Costs								
	Total for PMO			53060	66,560	53,560	53,266	226,446	

Project Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				Year 1 Total	Comments
				1	2	3	4		
									<p>Progress meetings were held with UNDP Samoa on 17 July, 25 July, 4 August, 22 August and 5 September.</p> <p>The Project Manager participated in the UNFCCC-UNIDO Workshop at Vienna on preparing technology transfer projects for financing.</p> <p>The Project Manager also participated in the Pacific Climate Change Roundtable meeting that was held in Apia. The Project Manager gave a presentation on renewable energy to a media training workshop that was held concurrently with the PCCR.</p> <p>Drafted 2 project proposals (PURE SIS TOUR NORTH & PURE SIS TOUR SOUTH) worth USD 100,000 and was submitted to the Japanese government-funded Pacific Islands Development Cooperation Fund, administered through the Pacific Islands Forum Secretariat. The projects are about the productive utilisation of renewable energy to promote eco-tourism in the northern and southern SIS.</p> <p>Two project concepts worth 200,000 Euro was submitted as a joint project with the Global Sustainable Energy Solutions to the REEEP's 7th global funding round and both have been shortlisted for further development.</p> <p>Drafted a 5 million Euro EDF 10 concept note for the EDF 10 Regional Indicative Programme (RIP). The restricted call for proposals was opened on 4th November with a closing date of 5th December 2008. There is 95 million Euro available in the RIP and its second focal sector is on Sustainable Management of Natural Resources and the Environment - €40 million</p> <p>Participated in the Second National Communication Technology Needs Assessment stakeholder consultation workshop of Samoa on 4th November 2008.</p> <p>Met with Ms Karen Bernard of the UNDP Pacific Centre in Suva on 4th November about the prospect for a Pacific-Caribbean south-south cooperation program.</p> <p>Conducted the MPR: 10-14 November 2008</p> <p>Conducted PCC 4 on 14 November</p> <p>Met Mr Morten Sondergaard of Danish Energy Management regarding the ADB TA on CDM and Clean Energy Fund (CEF). ADB loans USD100 million to Samoa for Power Sector activities. Part of Samoa's repayment goes into the CEF. Projects can then be considered under CDM and/or the CEF. Danish Energy Management will also identify possible CDM projects in Samoa in Renewable Energy.</p>
GRAND TOTAL FOR 2008				230,872	244,560	291,337	352,931	1,119,700	

ANNEX 3: FINANCIAL REPORT FOR THE 4th QUARTER OF 2008

Financial Report

FR01



(a) Designated Institution:	Secretariat of the Pacific Regional Environmental Programme (SPREP)			
(b) Award Title	: Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)			
Award ID				
(c) For the period:	01 October 2008 to 31 December 2008			
(d) Currency:	US Dollars			
(I)	(II)			(III)
Item	Chart of Account			Amount
(f) Opening Balance:				150,040
(g) Advance Received:				202,891
(h) Available Funds				352,931
Detailed Expenditures:	Account	Fund	Donor	
Project ID:				
1. TECHNICAL CAPACITY BUILDING & TECHNICAL SUPPORT				
1.1 - Provide support to Renewable Energy resource assessments and demonstration projects				
International Personnel	71200	62000	GEF Trustees	
Local consultants	71300	62000	GEF Trustees	
Contractual Services - Individuals	71400	62000	GEF Trustees	201,202
Travel	71600	62000	GEF Trustees	
2. MARKET DEVELOPMENT				
2.1 Support market development				
International Personnel	71200	62000	GEF Trustees	
Local consultants	71300	62000	GEF Trustees	
Contractual Services - Individuals	71400	62000	GEF Trustees	
Travel	71600	62000	GEF Trustees	
3. INSTITUTIONAL STRENGTHENING				
3.1 Provide institutional strengthening				
International Personnel	71200	62000	GEF Trustees	
Local consultants	71300	62000	GEF Trustees	
Contractual Services - Individuals	71400	62000	GEF Trustees	
Travel	71600	62000	GEF Trustees	32,081
4. FINANCING SUPPORT				
4.1 Provide support to establish and enhance existing financing mechanisms				
International Personnel	71200	62000	GEF Trustees	
Local consultants	71300	62000	GEF Trustees	
Contractual Services - Individuals	71400	62000	GEF Trustees	
Travel	71600	62000	GEF Trustees	
5. POLICY AND REGULATORY SUPPORT				
5.1 Provide assistance to establish and enhance existing and regulatory structures				
International Personnel	71200	62000	GEF Trustees	
Local consultants	71300	62000	GEF Trustees	
Contractual Services - Individuals	71400	62000	GEF Trustees	
Travel	71600	62000	GEF Trustees	
6. INFORMATION AND AWARENESS ENHANCEMENT				
6.1 Provide support to increased information and awareness in the area of Renewable Energy				
International Personnel	71200	62000	GEF Trustees	
Local consultants	71300	62000	GEF Trustees	
Contractual Services - Individuals	71400	62000	GEF Trustees	
Travel	71600	62000	GEF Trustees	6,958
7. EFFICIENT AND EFFECTIVE PROJECT MANAGEMENT				
7.1 National Consultative Workshops				
Local consultants	71300	62000	GEF Trustees	
7.2 Project Manager				
Contractual Services - Individuals	71400	62000	GEF Trustees	24,194
Travel	71600	62000	GEF Trustees	3,499
7.3 Administrative Finance Officer				

Financial Report

FR01



<p>(a) Designated Institution: (b) Award Title Award ID (c) For the period: (d) Currency:</p>	<p>Secretariat of the Pacific Regional Environmental Programme (SPREP) : <u>'Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)</u> <u>01 October 2008 to 31 December 2008</u> <u>US Dollars</u></p>
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	(I)	(II)		(III)
Item	Chart of Account			Amount
Contractual Services - Individuals	71400	62000	GEF Trustees	6,617
7.4 SPREP Project Team Miscellaneous				
General Operating Expenses	7200	62000	GEF Trustees	5,665
7.5 Inception Meeting				
Travel	71600	62000	GEF Trustees	
(i) Total Expenditures				280,216
(j) Closing Balance:				72,715
(k) Outstanding Obligations:				-
(l) Planned Expenditures:				185,000
(m) Total Requirements:				185,000
(n) Advance Requested:				112,285

<p>Designated institution approval/signature: Name & Title: <u>Kosi Latu, Acting Director, SPREP</u> Signature : Date : 09 February 2008</p>	<p>Country office approval/signature: Name & Title: <u>Naheed Haque, Resident Representative, UNDP</u> Signature: _____ Date: _____</p>
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'Pacific islands Greenhouse Gas Abatement through Renewable Energy Project (PIGGAREP)
Planned Expenditure for Quarter 1 - 2009

1. Technical Capacity Building & Technical Support	39,300
2. Market Development	13,100
3. Institutional Strengthening	13,100
4. Financing Support	13,100
5. Policy and Regulatory Support	26,200
6. Information and Awareness Enhancement	26,200
7. Efficient and Effective Project Management (PMO Costs)	54,000
Total Planned Expenditure for Quarter 1, 2009	185,000
Balance of funds available	(72,715)
Advance required	112,285