

QUARTERLY PROGRESS REPORT¹

Second Quarter 2009



- 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 2009 work plan and budget that was developed at the First Multipartite Review Meeting of November 2008.

6. Period Covered: 1st April – 30th June 2009

7. Summary of Overall Project Progress:

This is the second progress report on the 2009 Work Plan, attached as **Annex 1**, a work plan that has been designed based on the experiences with the slow delivery rate on the 2008 work plan. The multipartite review (MPR) meeting of November 2008 agreed that all PICs must only have an average of five activities each for the 2009 work plan but with the flexibility to increase or decrease based on capacity and delivery.

The general progress during the quarter was satisfactory.

The Cook Is wind energy project was endorsed by the Project Steering Committee (PSC) through circulation and a letter from the SPREP management has been sent to the Cook Is confirming the financial support of USD\$70,000 for this project. The project will involve two key components:

- Procure one new monitoring system and install at Atiu
- Disassemble the wind monitoring system in Mitiaro and transfer to Mauke
- Undertake a wind resources assessment for data collected at Aitutaki, Mitiaro and Mauke – US\$ 50,000
- Verify New Wind Farm Sites at Rarotonga – US\$ 20,000

The PSC also endorsed, via circulation, Kiribati's Renewable Energy Water Pumping Project and a letter from the SPREP management has been sent to Kiribati confirming the financial support of US\$ 22,526. The project is complementary to the Italian-funded solar water pumps for the rural schools in Kiribati and has four key components:

- Site survey before project implementation – US\$ 6,013
- Educational & Awareness enhancement - US\$ 500
- Institutional Strengthening – US\$ 10,000
- Monitoring & Evaluation – US\$ 6,013

Niue's project on *increasing national renewable energy power production capacity* was also approved by the PSC through circulation. This project has four key components:

- Assessment of the national grid to identify actions to reduce losses in order to maximize benefits from renewable energy – US\$ 50,000
- Assessing the stability of the overall power infrastructure system arising from increased production of RE/PV Grid Connected system - US\$ 50,000
- Undertake Tariff study to take into account power input from RE sources – US\$ 40,000
- RE awareness and dissemination of information /programmes for all sectors – US\$ 20,000

Tenders for four project activities endorsed for implementation in the Solomon Is were issued during the quarter. These activities include a hydro power assessment and a biofuel study, which were issued as international tenders, and an institutional support to a RE information centre and training on the installation, monitoring and maintenance of solar PV systems, which were restricted to local firms.

The evaluation of the tenders for the supply and installation of the Tuvalu Photovoltaic Electricity Network Integration Project (TPVENIP), including training of local engineers, was completed during the quarter. The contract for the supply and installation was signed during the quarter and the contract for the PIGGAREP-funded training was also completed during the quarter.

The general progress in the implementation of the 2009 work plan can be seen in Table 1 below. Baseline and Incremental Activities implemented in 2008 are also included for completeness purposes.

A regional capacity building workshop on the clean development mechanism was completed during the quarter. The workshop was a collaboration with UNEP RISOE and was aimed at raising the awareness about the potential financial and technology transfer opportunities to be gained from greenhouse gas emission reductions from renewable energy and energy efficiency.

Technical support was provided to the National Environment Service of the Cook Is on drafting a terms of reference to identify GHG savings in key establishments at Rarotonga and Ngatangia.

Preliminary discussions were conducted with authorities in Niue about a potential assistance by the PIGGAREP to draft Niue's climate change policy.

The general progress per PIC can be seen below:



No significant developments took place during the quarter.



The Director of Energy, who used to manage PIGGAREP activities in Fiji, was transferred to the Ministry of Youth and Sports during the quarter. This has affected the progress with the implantation of approve activities in Fiji.

The installation of solar home systems at various remote locations on Vanua Levu increased to two hundred during the quarter. Another four hundred solar home systems is awaiting tender board approval for installation in remote rural villages and settlements.

Four bio-gas digesters were constructed in cattle and piggery farms as part of a training program for sixteen bio-gas system builders. Another three systems are planned for construction in July 2009 as part of the training program for the accreditation of builders. The nation-wide program for bio-gas development will begin after the accreditation of the bio-gas builders currently under training.

A draft national biofuel policy was approved by the National Biofuel Steering Committee for initial circulation to Government Stakeholders to establish the Government position on the National Biofuel Policy before a second draft can be circulated to non-government stakeholders.



Kiribati

Kiribati National Energy Policy Implementation Plan (KNEP IP)

The KNEP was adopted by government during the quarter (May 2009). In June, the development of the KNEP IP for the Gilbert Group was carried out (facilitated by SOPAC and funded by EDF-9 Technical Cooperation Facility and SOPAC) through a 2.5 days workshop where stakeholders were involved in developing the associated action plan and implementation plan. A final draft of this KNEP IP is expected to be finalized early in the 3 QTR 09.

The PAS for the KNEP IP development for the Line & Phoenix Group in Kiritimati Island has been drafted and is yet to be finalized. This incremental activity is anticipated to be carried out in the 3QTR 09 after the Implementation Plans for the Gilbert group is finalized and approved by early in the 3 QTR 09.

Solar Water Pumps

The first tranche of funding for this Italian-funded project has been received. Implementation of solar water pumps in four designated secondary schools (3 in Abemama Island and 1 in Beru) under this tranche is expected to start in August 2009. From the initial formulation of this project, it was the Water Engineering Unit (WEU) within the Ministry of Public Works and Utilities who will assist the Energy Planning Unit (EPU) in the project implementation. The overall project is led by the Energy Project Engineer (EPE – Mr. Tianta Tarakia) from the EPU. A local TA (Mr. Moiwa Aroito – a retired Water Superintendent) has been engaged to take the role of the WEU. The Ministry has drafted a contract for the TA and this is expected to be signed during the 3 QTR 09.

In June, tendering for the project materials was called for in the local newspapers. Tender evaluation is expected to be completed in early July. Procurement of the project materials is expected soon in July too while installation process is expected in August when students return from the July public holidays and semester break and to assist in the installation and associated training.

The PAS for the above activity has been endorsed on a reimbursement basis. Site-survey for Abemama secondary schools has been carried out in May by the EPE and to be done

done again by the TA in July as part of the feasibility study for the PV water pumping project. The TA site visit is to focus on gathering technical data on the sites' water requirements while the EPE visit was more focused on fact/data-finding mission related to management and sustainability issues. The three schools that had been visited on Abemama are Kauma, CICD and Chevalier and there will be another site survey on Beru Island for the fourth secondary school (HBHS).

The planned activities under the project are the following:

Fund received from Italy	May 2009
Site-Surveys	May – July 2009
Tendering of Materials	June 2009
Procurement	July – August 2009
PV Pump Systems Installation /Training & Commissioning	Aug – Sept 2009
Fund Acquittal	Oct 2009
Monitoring & Evaluation	Oct – Dec 2009

RESCO Manager.

The UNDP Project Document (baseline) has been approved. Awaiting the signing of the Face form for processing payment of the second quarter budget.

Bio-fuel feasibility study in Kiritimati Island

This project has been approved for funding by the Italian government pending a final revision based on comments received on the Project Document. The development of the PAS for the above is in progress.



Wind Power Feasibility Study

The consultant arrived at Nauru on Friday, 5th of June, 2009 and was shown the pre-selected wind park and measuring site. Upon assessing this site, it was concluded that this site must be regarded as not being suitable for both the installation of the measuring tower and for wind power utilization. This is due to the highly uneven topography, the extremely dense vegetation, limited space and difficult access for trucks and heavy machinery.

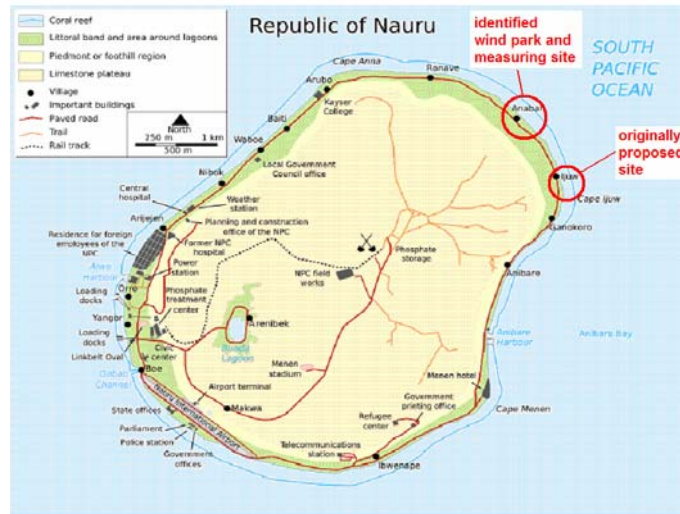


Fig 1: The new monitoring site at Nauru

The consultant then engaged jointly with Nauru Utilities, in a new round of site identification, trying to find a wind park/measuring site with the following characteristics:

- flat surface for installation of measuring tower and wind turbines;
- low surface roughness for better energy yield (i.e. little or no vegetation cover);
- sufficient space for the installation of approx. 2 to 4 MW wind power (based on preliminary data about current and expected load curves);
- close distance to existing medium tension distribution lines; and
- easy access for heavy equipment (trucks, cranes etc.).

Considering the timeframe needed for permission of the land owner (as well as official building permissions from Airport Authorities) for the installation of the 50 meters measuring tower, the consultant proposed to also consider installing the measuring equipment, if feasible, on already existing towers at suitable locations.

An alternative site was identified at Anabar (see attached map below), which lies approx. 1 km northwest of the originally foreseen site at Ijuw. The site lies at 38 m above sea level, and offers a sufficiently large area for the installation of several MW of wind power. At the same altitude, in just 250 m distance to the West, a 40 m former telecom tower is currently being equipped with the wind measuring sensors. The necessary permissions to use the existing free-standing tower was received from the Nauru Authorities. The use of the existing tower offers several advantages, namely:

- cost savings for not having to prepare the foundations for guy-wires and winch equipment;
- no need to guard the guy-wires during the one-year measuring campaign;
- much less efforts for installing the measurement sensors; and
- easy exchange without lowering the tower in case of sensor failure.



Fig 2: The Telecom tower

On the downside, there is a slightly higher risk for vandalism, as the free-standing lattice tower can be climbed upon. Therefore, Nauru Utilities has made available a strong lockable steel cabinet, which was mounted at some distance from the ground to keep unauthorized personnel away. Under this situation, the measuring campaign has started. The purchased 50 m tower has not been used, just the booms for sensor mounting (they had to be modified slightly to fit the existing tower), the data logger and the sensors themselves (wind direction, wind speed, temperature). When replacing the utilized equipment for approx. 3,500 USD, a complete set of wind measuring equipment would be available for a measurement campaign elsewhere in the Pacific.



Niue

The installation of the 35 – 55 kW grid connected PV system has been delayed until July due to a change in the arrival dates of the PV equipment at Niue. This is expected to be in late May and therefore the associated PIGGAREP-supported training will be conducted on the third quarter on 18-14 July 2009.

Niue's project on *increasing national renewable energy power production capacity* was approved by the PSC for a total budget of USD 160,000 and SPREP has officially notified Niue of this assistance. Terms of References for these assessments and studies are yet to be drafted and finalised.



A couple of new projects have been started. These include one each from PNGSEL, Bismarck Energy Limited and ATCDI. It is hoped that some new interests may be generated for project development due to the current Solar Power Training Course currently been held at ATCDI.

PNG Sustainable Energy Ltd

Togarao Small Hydro Electric Power Scheme

The PNG Sustainable Development Programme (PNGSDP) has endorsed the implementation of the Togarao small hydro project in the Autonomous Region of Bougainville. PNGSEL is therefore preparing the PAS to submit to PIGGAREP for co-financing.

The Project is a run of the river project using the Ivitu River near Togarao village with the aim of providing power to the Togarao and Wakunai community of Central Bougainville. The 2.0 MW hydroelectric project will cover a total of approximately 71km of 22 kV sub-transmission line covering Togarao through Wakunai to Uruai and Mabiri.

In 2008 PNGSEL contracted the civil design works to Cardno and preliminary design has been completed. Hydro Tasmania was contracted to review the technical parameters and re-scope the distribution works in May 2008 and this has been completed.

In May 2009 the power distribution works was rescope, surveyed and designed for construction by a surveying firm that was engaged. When the technical review and distribution survey is completed, PNGSEL will issue the tender for the construction to start in August 2009.

Bismarck Energy Limited (BEL)

Mr Karl Yalo, the Managing Director of BEL is interested in developing a geothermal power station in Rabaul in the East New Britain Province. He has prepared a PAS template and has submitted a draft PAS to Garaio Gafiye to check and then make a submission to PIGGAREP for co-financing support.

He is working closely with geothermal experts from the Philippines and New Zealand and has also made contacts with European financial institutions for funding support. He has personally funded some of the initial work including sourcing information, making technical visits to the site and engaging experts to make initial assessments. To date BEL has spent approximately US\$372,000.00.

BEL is a 100% PNG owned and operated geothermal company. It is focused on developing PNG's rich geothermal resources and bio-fuel using coconut oil.

BEL has secured from the PNG Government, a geothermal exploration and development license valid for six years. The license covers the proposed project site in Rabaul. BEL

has signed a Cooperation Agreement with PNG Power Ltd for supply of electricity using geothermal energy. PNG Power requires 12 megawatts for Kokopo and Rabaul.

PIGGAREP co-financing is required to complete full scale geotechnical surveys (geological, geochemistry & geophysical) to establish the commercial viability of the project. The geotechnical survey is expected to cost US\$854,000.00. BEL has not done or undertaken any work since January, 2009, as it continues to find ways to raise the US\$854,000.00.

ATCDI

Biodiesel Project

The biodiesel project is based in the Department of Mechanical Engineering (DME) and it is coordinated by Professor John Pumwa. ATCDI has been assisting DME to source funding through PIGGAREP and other donors.

The PAS submitted to PSC with comments from members was sent to Professor Pumwa to be revised and resubmitted. This is yet to be done due to other work. Professor Pumwa will meet with Garaio Gafiye and revise the PAS and submit to PIGGAREP.

Professor Pumwa has been invited to participate in the Vanuatu visit in August 2009. This would be useful as he would be able to see the operations of UNELCO which has biodiesel experience and other RE systems for the benefit of PNG.

Training Course on the Design and Installation of Solar Power Systems

One of the projects ATCDI submitted to the PIGGAREP project for co-financing is the Renewable Energy Training Course/Workshop for the MOMASE Region.

The Sustainable Energy Financing Project (SEFP) which is a project of the World Bank and the PNG Sustainable Energy Ltd (PNGSEL) has initiated a programme to provide training in solar power and pico hydro power. The first training is the Design and Installation of Solar Power Systems.

This programme is similar to what ATCDI had proposed to PIGGAREP. The target groups include solar equipment distributors, engineers, customers, Churches groups, development workers, etc. Women participation is encouraged too.

ATCDI was approached by SEFP to assist facilitate the training at ATCDI UniTech in Lae. This was agreed and Garaio Gafiye has been facilitating this training course.

The training course commenced on 22 June and will end on 3 July and it is presented by Geoff Stapleton of Global Sustainable Energy Solutions from Ulladalla in NSW. A maximum of 14 participants was selected of 40 applicants in order to keep the group to a manageable level.

The course fee is K1000.00 per participant to cover the necessary expenses to run the course at UniTech. This fee will change depending on the number of participants and the

change in venue. The participant's employees are paying the fees, travel and per diem costs. It is not possible for participants to self sponsor so funding will be sourced to co-finance future trainings courses.

SEFP is funding the trainer and the 7 solar kits the participants will use during practicals. Each kit consists of a C20 50 Ah x 12 Volt battery, 2 x 3 Watt lights and a 6 Amp regulator. A 205 page technical manual entitled "Solar Power Systems Design and Installation – Training Manual, Special Edition for Papua New Guinea" prepared by Geoff Stapleton. Mr Stapleton will do a couple more training sessions every six months and future courses will be run by ATCDI engineers or other trainers.

ATCDI will prepare a PAS and submit to PIGGAREP for the possibility of co-financing the next training courses to be held in other Provincial centres on a 6-monthly basis.



Fig 3: Solar PV Training in PNG



Samoa

A Memorandum of Understanding has been signed between the Electric Power Corporation and the Ministry of Natural Resources and Environment (MNRE) to help guide the Hydro Data Collection Programme. This partnership will see the Water Resources Division of the MNRE take a leading role in the data collection and the monitoring of the identified potential hydropower sites. A supervisory officer has been appointed to oversee this project and will be based with the MNRE. One monitoring station has been installed and has started collecting data.



Fig 4: Construction of the Gauging station at Tafitoala.

A Wind Engineer from New Zealand has recently joined the EPC as a volunteer to help out with EPC's wind development programme. One of the first tasks for the Wind Engineer was to help reassess the sites on Savaii Island for wind monitoring. A number of sites have been identified as having the best potential for monitoring and for setting up wind turbines if the resource is proven viable. Further modelling will be carried out to ensure that the new monitoring masts are installed at the best possible locations.

A reference wind monitoring station has been installed about 6km from the proposed wind farm site in Upolu on top of an existing telecommunications tower. This station will provide vital information about the wind resource close to the site without having to install a monitoring mast on site. It is envisaged that after 12 months of data has been collected from this station, a final analysis will then be carried out to determine the resource potential at the proposed wind farm site.



Fig 5: EPC staff members installing wind monitoring equipment on 34m telecommunication tower

The Renewable Energy Officer of the EPC as well the Principal Energy Officer of the Ministry of Finance attended the regional workshop on CDM which took place in Suva,

Fiji at the end of May. This workshop was particularly important as it provided vital information on the CDM process and how to identify possible projects as well as assisting with the setup of Samoa's Designated National Authority.

Several companies from China have expressed interest in setting up medium-large scale grid connected solar projects in Samoa. One of these companies visited the country to discuss these possibilities with the EPC. The government of Japan through JICA have also expressed interest in funding EPC's Solar (PV) Rural Electrification project.

A pilot Biomass gasification plant for electricity generation has been approved in principle by the EPC. A joint venture between an Australian company and a local company operating as an Independent Power Producer will undertake this project which will utilise waste coconut husks and shells as the feedstock for a small 100kW gasification unit.



Solomon Is

The second quarter of 2009, was devoted to the finalization of the 5 PAses for Solomon Islands in terms of fine tuning for the Project Steering Committee's (PSC) evaluation. After fine tuning the 5 PAses were approved by the PSC.

The following PAses were approved for implementation:

- i). Bio-fuel Development and Expansion in the Solomon Islands
- ii). Update Feasibility Studies for the Huro and Rualae Mini-Hydropower Schemes
- ii). RET Installation at the Renewable Energy Information Centre
- iv). Solar PV Training Workshops for Users of Italian Funded Solar PV Systems and Sponsorship of Electrical Trade students at the Solomon Islands College of Higher Education

In addition to that power needs assessments were done at 3 Secondary schools in one of the remote Provinces in the Solomon Islands – Temotu Province and 2 Secondary schools in Makira Province.

Also, there is a directive from the Director of Energy to put a halt on the installation of solar PV systems in the secondary should funded under the Italian Government, so that an independent local expert along with the staff of the Energy Division can evaluate the quality of work done by the energy trainee technicians who had installed the systems in the community high schools. This is part of the project management check-lists. It is anticipated that installation will proceed after such evaluation.

Power needs Assessments and Installation of Solar PV Systems in Community High School

In the second quarter of 2009, power needs assessments were done at the following secondary schools in Temotu Province

- i). Balipa'a Community High School in the Reef Islands
- ii). Patteson Community High School in Utupua Island
- iii). Luesalemba Provincial Secondary School on Santa Cruz Island

- iv). Sogotiwa Community High School in Makira Province
- v). Pawa Provincial Secondary School in Ugi Island (Makira Province)

Energy technician spend the first three weeks in May doing preliminary installation work on the Solar PV systems in Adaua Provincial Secondary School. The total capacity for Adaua Provincial Secondary School solar PV system is about 2.0kW. That comprises of individual stand-alone systems for the administration block; dormitories; classroom and other amenities. The installation was aborted due to non-commitment by the school authority- thus most of the equipment had to be stored for save-keeping. A date for the continuation of the installation is yet to be confirmed by the Project Officer

RE Information Center

The construction of the Renewable Energy Information Centre is progressing well and 80% or work had already been done. Only final touches on windows and paintings need to be done. Installation of RET equipment will be done after the evaluation of the proposals received from bidders, which would be done in less than (2nd week of July) a week time. It is expected that the Centre will be finished by the first week of August 2009. The centre has 2 offices, one laboratory (Bio fuel), one room for CNO expeller and centrifuges and a space for the pico-hydro demonstration set-up.



Fig 6: End view of the newly constructed RE Information Centre behind the Energy Office



Fig 7: Along the corridor of the newly constructed RE Information Centre



Fig 8: Open space for the set-up of a pico-hydro demonstration

Biofuel

Parallel to PIGGAREP's support to the Solomon Is biofuel development (Vanuatu study tour and biofuel feasibility study), an ADB technical assistance project "Promotion of Renewable Energy in the Pacific" was approved during the quarter and is expected to begin by end of 3 QTR 2009. Under this project, US\$ 1 million is being set aside to cover the design and equipment installation when the SIEA power station at Lata will be converted to use CNO. The Premier of the provincial government has already been informed.

A private business (Solomon Islands Tropical Product) is currently installing a 300 kW generator using coconut fuel. The intention is to use coconut fuel and connect into SIEA

power grid. Private Operators can sell renewable energy generated power to SIEA at the Domestic Base Tariff and this rate is to be reviewed annually.

Proposal Received from Advertised “RFP”

The Request for Proposals were put out in the local newspapers (Island Sun and National Express) from the 6th of May 2009. The RFP were put out for a month, hence the closing date for any proposal should be received on or before the 10th of June 2009. In addition to the RFP being put out in the local newspapers, they were also published in the Ministry’s website: www.mines.gov.sb/energy and the SPREP’s website: www.sprep.org/piggarep.

Before and on the closing date (10th June 2009) for the RFPs, numerous submissions were received. These submissions will be evaluated early in the 3 QTR 09.

Tina Hydropower Project

This project is for the Design of the hydro involved Run off the River type with a capacity of 6 to 10 Megawatts. The budgets is estimated as USD 40 million and to be sourced from the European Investment Bank, the Word Bank and the Solomon Is National Provident Fund. Pre-feasibility and feasibility studies has commenced during the quarter. Water monitoring equipment has been put in place to suit low flow periods. The Land Acquisition process has commenced. Project is being managed under the World Bank-supported Management Team at SIEA and the intention is for an Independent Power Producer to run the project once completed.



Fig 9: Tina River



Rehabilitation of the Mango and Mo’unga’one PV project

The installation of the new solar PV equipment on both islands was completed during the quarter. A total of 60 solar home systems, funded by the Italian government through IUCN, were installed. There were changes to the installation as compared with other solar home system installations in the Kingdom. The battery box was raised about 3 - 4 feet high from the ground as experiences from earlier projects showed that households

would not afford to put in more batteries of their own. It was also noted that putting a battery box that high would be very convenient to technicians when carrying out their monitoring and maintenance work. There is however a concern that the acid vapour may cause a problem for the controller and positioning the controller separately from the battery is currently under consideration.



Fig 11: Installing the SHS in the Haápai Group of Tonga

Solar Street Lighting

The installation of the solar street lights at Nakolo was completed.

The Chinese Government through the Nuku'alofa Township Reconstruction Development project has endorsed solar street lighting to be installed all over the Nuku'alofa area. The institutional setup is still being worked out but the Energy Division has been approached to assist in catering for the training needs of these projects. The training, to be funded by the PIGGAREP in 3 QTR 09, will include the participation of suppliers / installers of solar street lighting and solar water pumping equipments together with PV operators / caretakers / technicians from Village Solar Water Committees.

Grid-connected Photovoltaic Systems

There were no further developments with the study conducted by the Chinese Shanghai Construction (Group). The tenders for the NZAID-funded system for Saint Andrew High School were issued during the quarter. NZAID is also funding a study to look at providing off-grid power for water pumping at Tonga College and its sport stadium.

During the quarter and as part of the Japan government-funded Phase II of the Vaiola Hospital Construction, a team of three specialists from Japan conducted a study to determine the feasibility and appropriateness of the solar panel system in relation to its size and installation as well as site investigation, data collection and discussions with the Ministry of Health and counterparts. Solar panel system is being planned for Vaiola Hospital that could see a 30 per cent cut in the hospital's electricity bills, which presently runs at around \$40,000 per month. It is anticipated that the grid-connected solar PV system could provide over 20 per cent of the hospital's power supply.

The study will compile a Basic Design Report including the solar study outcome report that will be presented to the Government of Japan for approval. It is expected that by the end of October 2009, the overall plan including costing of the project will be finalised and the tender for the work and the actual construction can begin in 2010.



Tuvalu Photovoltaic Electricity Network Integration Project (TPVENIP)

The award of the project contract to Eco-Kinetics was done in April 2009 after a long delay in sorting out some contractual issues, the supply, installation and commissioning contract between the Tuvalu Electricity Corporation (TEC) and Eco-Kinetics was finally signed on the 9-June-09. The training contract that will be financed by PIGGAREP was also signed on this date.

TEC was also able to carry out data logging at the school to ascertain the actual load requirements of the school. These data has been forwarded to the Contractor to analyse and to design the final system according to the actual requirements of the Motufoua Secondary school.

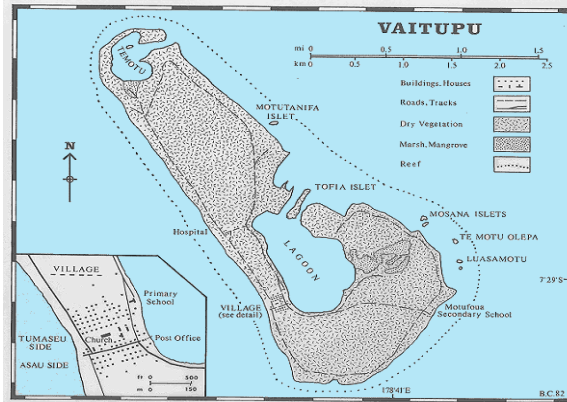


Fig 12: A map of Vaitupu Island





Fig 13: Aerial Photograph of Motufoua Secondary School

40 kW Grid-Connected PV at Funafuti

During the quarter, the project continued to perform satisfactorily resulting in significant diesel fuel and dollar savings. The total diesel fuel savings since its commissioning in February 2008 now total to 21,773 litres of diesel fuel equivalent to AUD \$36,815.

Wind Resource Assessment

In May'09, two years of wind assessment for Funafuti was completed. It is now planned to continue wind resource assessment at the outer-islands and preferably to start with Niulakita, the most southern island of Tuvalu, close to Fiji.

The Project Activity Summary (PAS) for the shifting of the wind resource assessment equipments has been endorsed by the PSC members and will be implemented by third quarter of 2009.



Fig 14: Wind monitoring at Funafuti, Tuvalu



Gasifier

A demonstration was conducted by the Alofa Tuvalu on the use of a gasifier for cooking at the Tuvalu Maritime Training Institute (TMTI). The chamber of the gasifier was fed with coconut shell charcoal and lit. The gas collected was then channelled through a hose to the burner. It was noted that the burning flame is more-or-less the same as the flame from using LPG. According to the TMTI Chief Engineer, with a fully filled chamber, the gasifier can burn for more than 8 hours. The demonstration was also led by Dr. Gilles Vailingom.



Fig 15: Gasifier Unit



Fig 16: Lighting the gasifier



Fig 17: Lighting the burner



Fig 18: Flame from the gasifier – note the blue flame similar to LPG

Both demonstrations were carried out at the TMTI with the ultimate aim for the Institute to be a renewable energy training school.

Bio-diesel demonstration

In May 2009 the Alofa Tuvalu demonstrated the possibility of using coconut oil to substitute diesel oil. Methanol and baking soda was added to the coconut oil as a catalyst to the process. Proper procedures have to be followed in order to achieve the right mixture. The mixture was then poured into the machine and bio-diesel was collected. The process to produce bio-diesel took approximately 8 hours.

The product was then tested with the generator and it was noted that the generator operates without any problems. The Engineering department of the school did further testing by connecting the generator to provide power supply to all staff residence (15 residences) and the main office and the generator operates continuously for three hours without any problems. Fuel consumption during this testing period was 7 litres/hour with a 11 kW load.

The demonstration was led by Dr. Gilles Vailongom of the French research organization CIRAD who is a leading international expert on the use of pure coconut oil in diesel engines. The Tuvalu Electricity Corporation looks forward to participating in the Vanuatu renewable energy technical tour and training workshop next quarter and to learn from the Vanuatu biofuel experiences.



Fig 19: The bio diesel machine



Fig 20: Mixing of methanol and baking soda



Fig 21: Testing of bio-diesel with the generator



Vanuatu

EU Energy Facility Biofuel Project

Vanuatu has been fortunate in having three of its project funded under the EU Energy Facility Call for proposals in 2006. The projects are: (i) Provision of renewable energy to 2 villages in TORBA Province using locally produced coconut oil, (2) Provision of renewable energy to 3 villages in PENAMA Province using locally produced coconut and (3) Provision of renewable energy to 4 villages in MALAMPA Province using locally produced coconut oil. These three projects have been bundled into one big biofuel project. Awareness activities have been completed on all the project sites including the three provinces and by August 2008, the 9 plots of land which the projects are to be situated were all marked and surveyed.

The technical designs for the generation and distribution was already completed by UNELCO including tender for the supply of generators and transmission lines. The tender is now awaiting evaluation sometimes very soon. During the quarter, Mr. Leo Moli, the Director of Energy was appointed as the Project Manager.

The project on the three provinces is being put on halt as it awaits a final evaluation report from the Port Olry biofuel prototype project. The evaluation report will be finalised sometimes around August. Once the final evaluation report is ready, lessons learned from it can be used as a basis to improve the biofuel projects on the other three provinces.

Sarakata Hydropower Project

The installation of the third phase of the Sarakata hydropower project was completed and commissioned on 8th January 2009. The capacity of the hydropower has now been increased from 600 kW to 1200 kW. The rehabilitation of the water canal and the painting of the power house is currently underway. The official handing over ceremony of the Sarakata hydropower was on 25th May 2009.

The official handing over ceremony took place on the 25th May at the project site in Santo, close to the power house. The meeting was attended by the Deputy Prime Minister and 5 other Government ministers including their political advisors, directors of various Government departments and other senior government officials who have contributed to the successful completion of the hydro project. From the Japanese delegation, we had the Japanese ambassador in Fiji and his delegations of 11 people. The occasion was very successful and was a memorable one for the people of Vanuatu and especially Santo and its people who are directly impacted by it.



Fig 22: Cutting ribbon ceremony by Minister of Energy Ambassador



Fig 23: Speech done by the Japanese Ambassador

Sarakata Hydro Risk Awareness and Evaluation study

A team comprised of the Environment Unit, Forestry Department, Water Resource Department, Fisheries and Energy Unit will be conducting a hydro risk awareness and consultation meeting with the communities living close to the vicinity of the hydropower project. However, this has not yet been implemented since the PAS has not yet been endorsed by the PSC.

Also a technical, economic, environment and social evaluation study is scheduled for January 2010, a year after the commissioning of the project. However, the PAS is yet to be finalized and endorsed by the PSC.



Fig 24: Sarakata Power station



Fig 25: Tail race

Energy Ecosystems and Sustainable Livelihoods Initiative (EESLI)

Under this project, there are three components:

- Talise Hydropower Project
- Wind Resource Monitoring
- Solar PV Rehabilitation

There has been some delays in implementing this project. However, USD13,100 has already been disbursed into the Vanuatu Government to start implementing some of the activities. The advertisement for the Project Coordinator has been made with the recruitment expected to have been made in June. Scoping missions to 6 provinces to identify sites for installing the wind monitoring equipments commenced in June. There is already request for extra funds to carry out scoping missions to Santo and Malekula for the solar rehabilitation component.

Talise Hydro

The consultancy agreement for the conduct of the Talise Hydropower feasibility study was signed by GHD of Australia on 30th April. The field work was carried out during the period of 14th – 25th May where six experts from GHD (one environmentalist, a civil engineer, a renewable energy expert, a sociology expert, an economist and local energy policy expert) took part in the field study. As part of the capacity building for local staff, two officers of the Energy Unit took part in the field study and their report has been submitted to the PIGGAREP PMO. The report highlighted hands-on experiences learnt on conducting water flow measurements, the use of surveying equipments and the global positioning system (GPS) and the conduct of the environment impact assessment. Due to time constraints, the two officers did not take part in the social and economic studies which involved interviewing people from the Talise communities.



Fig 26: Measuring the water flow

The inception note for this study was finalised during the quarter after comments from the project stakeholders.



Fig 27: Community Meeting

The study is also to cover the potentials of other renewable energy technologies at Talise.
Update on Wind Resource Assessment

During the period of June 22nd to July 5th, two officers from the Energy Unit undertook a wind scoping mission to the Provinces of Torba, Malampa, Sanma and Penama respectively to consult with relevant stakeholders and landowners and to identify suitable sites for the wind monitoring towers. The mission was accomplished with no major difficulties. The four sites on the four provinces have now been identified with no conflicts on site. On Torba Province, the site was identified on the eastern part of Vanualava island, and its exact location is about 3 km away from the provincial headquarter. On Malmapa Province, the wind monitoring site has been identified on Litzlitz on the central eastern part of Malekula. Litzlitz is a good site as it has an existing grid that was connected from the Lakatoro main grid. For the Sanma province, a suitable site was chosen on Port Olry which is where the existing biofuel project is. The village has a micro-grid that with a power station running on coconut oil. Port Olry is located on south east of Santo and is a spot which captures most of the South East prevailing winds.



Fig 28: Wind Monitoring site on Malekula



Fig 29: A potential site on North Pentecost

As the project targets all the 6 provinces of Vanuatu, there are still two provinces left to cover and that is Tafea and Shefa. These two provinces will be covered in the next coming months.



Fig 30: Site on Sola, Banks (EU officer and Landowner)



Fig 31: Wind Monitoring Site identified on Port Olry

Solar Rehabilitation

For the Solar Rehabilitation component, a draft ToR for the scoping mission is underway and awaiting endorsement from the IUCN regional coordinator. The scoping mission for the solar component is expected to be implemented in August 2009.

Regional / PMO

Following the completion of the selection process for projects to be funded under the REEEP's 7th Programme Cycle, the project that PIGGAREP assisted to develop for Tonga was approved. This project is to draft its renewable energy regulations and an energy efficiency policy. The Solomon Is' and Tuvalu's were on the reserve list. Joint proposals between PIGGAREP and the Global Sustainable Energy Solutions Pty Ltd (GSES) were also on the reserve list.

An opportunity arose in early June to further revised the Identification Fiche (IF) for the joint SOPAC and SPREP EDF 10 Energy proposal in a very tight timeframe. Inputs from the PIGGAREP PMO were provided. The revised IF did not pass the test of the Quality Support Group at the EU Headquarters and further revisions were required. SPREP and SPC shared the view that the more time is needed to carefully think this revision through, taking into account the outcome of the PEMM, RIF and the leaders meeting in August.

As part of the EU-funded "Capacity Building related to Multilateral Environmental Agreements (MEA) in African, Caribbean and Pacific (ACP) Countries", the PIGGAREP jointly conducted a Capacity Building Workshop on the Clean Development Mechanism (CDM) with UNEP RISO. The workshop was held at the IUNC conference centre at Suva on May 25-29. Other than learning about the basics of CDM and its project cycle, the workshop produced a draft work plan which will be further finalised with UNEP and the PICs prior to EU approval and its implementation during the next three years.

The project manager participated in the Regional Energy Meeting / Pacific Energy Ministers' Meeting (REM / PEMM) that was held in Tonga on April 20-24 and did presentations on renewable energy and an EDF 10 joint proposal with SOPAC. A key outcome of the PEMM was the one energy agency and one energy programme which CROP agencies will work together on implementing, and taking into consideration the current work on the Regional Institutional Framework (RIF). An unofficial meeting of the CROP EWG was held on the margins of the CDM workshop in order to assess the outcome of the PEMM.

The project manager was invited to participate in the International Energy Conference *Towards an Integrated Energy Agenda Beyond 2020* which was held at Vienna, Austria on 22-24 June 2009. Costs were paid for by the conference organisers and the project manager was asked to moderate a panel discussion on *Strengthening Sustainability and Energy Security in Small Island Developing States (SIDS)*. Other representatives from the Pacific were from SOPAC, the Pacific Power Association, IUCN Oceania, Fiji (minister), Kiribati, Nauru, Samoa, Solomon Is and Tuvalu (Minister). The panel in the SIDS session were Professor Al Binger (C5), Paul Fairbairn (SOPAC), Juan Marco Alvarez (IUCN), Susan McDade (ResRep UNDP Cuba), Tom Roper (Former Australian Parliamentarian), Elizabeth Thomson (Senator of Parliament, Barbados) and Joseph Williams (Manager Energy Programme, CARICOM).

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 also shows the achievement of the project to date:

TABLE 1: SUMMARY REPORT ON THE IMPLEMENTATION OF THE 2009 WORK PLAN

	2008 Activities		1 QTR 09 Activities		2 QTR 09 Activities		3 & 4 QTR 09 Activities
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Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
IMMEDIATE OBJECTIVES/OUTCOMES 1: Improved knowledge about RE resources potential and increase the number of successful commercial RE applications on the ground				
CI 08-1: Topographic and geotechnical survey of the Rarotonga Kiiiki wind power site			Completed the topographic survey at a cost of about USD 28,000. Given the outcome of the topographic survey, it was recommended and agreed to by all the parties not to proceed to the geotechnical survey.	
CI 09-1: Mangaia Power System Upgrade			A PAS is yet to be developed.	A 3 QTR 09 activity with a budget of USD 10,000
CI 09-2: Wind Power Feasibility Study			A PAS for USD 70,000 was drafted to install wind monitoring systems at a 'hot spot' site on each of the three islands, Mitiaro, Mauke and Atiu and to evaluate alternative sites at Rarotonga. PAS has been finalised and endorsed by the PSC. Funding support confirmed with the Cook Is govt.	A 4 QTR 09 activity with a budget of USD 50,000 but has been advanced to 3 QTR 09
FJ 09-1: Technical, economic & environmental evaluation of solar home systems project	5,000	An additional 60 installations of solar home systems in 4 Settlements and 8 villages in Vanua Levu, bringing the total to above 200. Each system comprises of 40 W of fluorescent lights and a power point for a small radio; 100	A PAS for USD 75,000 was endorsed via PSC 5 during the quarter. Letter from SPREP to Dept of Energy confirming financial support was sent 25/3/09. Activity include a review consultancy and	The big difference in the budget approved (20,000) in the 2009 workplan and that in the PAS (75,000) is noted.

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
		<p>Wp of PV; 100 Ah, 12 V deep cycle battery with 8 A charge controller.</p> <p>Another four hundred solar home systems is awaiting Tender Board approval for installation in remote rural villages and settlements.</p>	<p>study tour. Study Tour is planned for the Ha'apai Group in Tonga in October 2009.</p>	
<p>FJ 09-New 1: Hydro Resources Assessment at Nacomoto Village, Kadavu and Sese Village, Cakaudrove</p>		<p>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>A PAS for USD 20,000 was endorsed via PSC 5 during the quarter. Letter from SPREP to Dept of Energy confirming financial support was sent 25/3/09.</p> <p>The equipments have been ordered from NIWA in NZ.</p>	<p>There is no figure on the Budget column as activity is not on the approved work plan.</p> <p>This activity was not on the 2009 work plan but has been introduced as a priority activity. It has a budget of USD 20,000 for 2 QTR 09.</p> <p>Fiji DoE to provide an update on the baseline / co-financing activities.</p>
<p>FJ 09-New 2: Biofuel Standards</p>		<p>The work involves (i) Quality Standards for liquid biofuels: ethanol, bio-diesel and coconut oil and (ii) Testing of vehicles with the biofuels blends that will form a part of the National Mandate.</p> <p>The draft standards for ethanol and bio-diesel were drawn up on the basis of quality standards for these two fuels that have been declared in Brazil, India, Europe and USA.</p>	<p>Incremental activity includes the study tour to Vanuatu's biofuel development (see REG 09-2: Technical visits to RE developments in Vanuatu).</p> <p>Director of Biofuel (Mr Ifireimi Dau) has been nominated for the technical visit on 3-7 August 2009.</p>	<p>There is no figure on the Budget column as activity is not on the approved work plan.</p>

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
		<p>Vehicle data from the Land Transport Authority has been analyzed and the number of vehicles on Fiji's roads sorted out according to their year of manufacture.</p> <p>A draft national biofuel policy has been approved by the National Biofuel Steering Committee for initial circulation to Government Stakeholders to establish the Government position on the National Biofuel Policy before a second draft can be circulated to non-government stakeholders.</p>		
KI 09-1: National Training for Trainers in PV maintenance & Trouble Shooting			A PAS is yet to be developed.	A USD 45,000 activity for the 4 QTR 09.
KI 09-New 1: PV Water Pumping Training		<p>The first tranche of the Italian funding has been received.</p> <p>A local TA (Mr. Moiwa Aroito – a retired Water Superintendent) has been engaged to assist in implementing the project.</p> <p>Tendering for the project materials was called for and advertised in the local newspapers. Tender selection is expected to be completed in early July.</p>	Site-survey for Abemama secondary schools was completed in May. The three schools surveyed in Abemama included Kauma, CICD and Chevalier and there will be another site survey in July for the fourth secondary school at Beru Island (HBHS).	A new activity for USD 22,526 to be implemented on 3 QTR 09 and whose Italian-funded co-financing activity has been confirmed.
NA 08-1: Nauru Wind power feasibility study		More than 20 AusAID-funded wind and solar for wireless internet and mobile phones were installed in 2008.	Contract was awarded second half of 2008. Monitoring equipments have been purchased and are expected in Nauru on 2 QTR 09.	

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
			Consultant arrived at Nauru to find the earmarked site unsuitable. An alternative site at was identified at Anabar which lies approx. 1 km northwest of the originally foreseen site at Ijuw. The site lies at 38 m above sea level, and offers a sufficiently large area for the installation of several MW of wind power A 40 m former telecom tower is currently being equipped with the wind measuring sensors.	
NA 09-1: PV training		A solar grid-connected system with capacity of 40 kWp was installed at Nauru College in October 2008. 60 stand-alone solar home systems each with 130 Wp panels was installed in 2008 through funding from Taiwan.	A PAS is yet to be developed.	A USD5,000 activity for 3 QTR 09.
NI 09-1: RE training in solar water heaters and other relevant RE technologies	5,000	Completed the installation of 240 solar water systems as part of the REP-5 programme.	A PAS is yet to be developed.	A USD10,000 activity with USD 5,000 each for 2 QTR and 4 QTR respectively.
NI 09-2: Network and System Modelling for the Grid Stability	50,000	Contract for the supply and installation of a 52 kW grid- connected PV system under REP-5 was awarded. Installation is planned for 3 QTR 09.	A PAS was developed and endorsed by the PSC in 2008. The tender was issued and the offers were all above USD 100,000. A new PAS merging NI 09-2 & NI 09-3 was drafted and reviewed and endorsed by the PSC via circulation. Niue govt has been informed of the funding support. Awaiting completion of a ToR for the study before the request for	A USD 50,000 activity for 2 QTR 09. Now merged with NI 09-3.

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
			proposals from consultants.	
PNG 09-1: Feasibility Study for the rehabilitation of Sohun hydro, Telefomin hydro and Yagusa Hydro (PNGSEL)		Expected Provincial Govt support and funding are not forthcoming.	A PAS is yet to be developed.	A USD 50,000 activity for 3 QTR 09. PNGSDP has given the approval to PNGSEL to study and construct the 2 MW Togarao mini-hydro Project in the Autonomous Region of Bougainville. A new PAS will be prepared replace this activity.
PNG 09-2: Biofuel research/study into coconut oil as a substitute fuel for diesel engines (ATCDI/UniTech)		USD 54,009 of co-financing has been received. The literature survey is in progress. Two 2-kW Diesel Engines have been purchased for comparative performance testing. An order has been placed for the purchase of the exhaust gas analyzer. A site for the experimental set-up has been identified within the University.	A PAS was drafted and commented on. Final version to be circulated for PSC endorsement has yet to be received. Project proponent (Profesor John Pumwa) was invited to joint the study tour to Vanuatu and observe the biofuel developments there but cannot make it.	A USD 50,000 activity for 3 QTR 09.
SA 09-1: Hydro data collection programme		Final consultations were carried with two of the villages identified as monitoring sites. These were followed by site surveys to identify suitable locations to install the water level gauges The shipment of water level monitoring equipments have been finalised and paid for by ADB and they are expected to arrive in the country in 2 QTR 09.	EPC and MNRE entered into a MoU regarding cooperation on hydro-related data collection, analysis and management. EPC has recruited a Technical Supervisor who is based at MNRE, paid by PIGGAREP, to collect, analyse and manage hydro data for EPC. One monitoring station at Tafitoala has been installed and has started collecting hydro data.	Project was endorsed by the PSC in 2008 and USD 81,000 was committed in 2008 for this.
SA 09-2: Wind resources assessments		The Upolu Wind Resource Assessment report has been completed and a site has been identified as having potential for a	The monitoring equipments were ordered and most have been received with installation planned for 2 QTR 09.	Project was endorsed by the PSC in 2008 and USD 33,000 was committed in

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
		<p>commercial wind farm. However more data collection must be carried out in order to confirm the results of the assessment.</p> <p>EPC has finalised arrangements for a wind engineer to assist in the installation of the monitoring equipments. The wind engineer from New Zealand has recently joined the EPC and is reassessing the sites on Savaii Island for wind monitoring. Further modelling will be carried out to ensure that the new monitoring masts are installed at the best possible locations.</p> <p>A reference wind monitoring station has been installed about 6km from the proposed wind farm site in Upolu on top of an existing telecommunications tower.</p>		2008 for this.
SI 09-1: Workshop /Training for users (schools) of the installed Solar PV systems		<p>Power needs assessments were conducted at 4 secondary schools. Started with the installation of a 1.515 kW solar PV systems at Buruku Adventist Community High School.</p> <p>Conducted the power needs assessment of Rokera Provincial Secondary School. Completed the following secondary schools in Temotu Province during 2 QTR 09:</p> <ul style="list-style-type: none"> i) Balipa'a Community High School in the Reef Islands ii) Patteson Community High School 	<p>A PAS for USD 20,000 was endorsed via PSC 5 during the quarter. Letter from SPREP to Dept of Energy confirming financial support was sent 25/3/09.</p> <p>The request for proposals was issued during 2 QTR 09 and the consultancy will be offered in 3 QTR 09.</p>	Budget of 3,000

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
		<ul style="list-style-type: none"> iii) Luesalemba Provincial Secondary School on Santa Cruz Island iv) Sogotiwa Community High School in Makira Province v) Pawa Provincial Secondary School in Ugi Island (Makira Province) 		
SI 09-2 : Re-do feasibility study for HURO and RUALAE Hydropower schemes	7,000	Solomon Is govt co-financing of USD 55,000.	<p>A PAS for USD 20,000 was endorsed via PSC 5 during the quarter.</p> <p>The request for proposals and the ToR was finalised and issued during 2 QTR 09. The evaluation process began during the quarter and will be finalised with the contract signed during 3 QTR 09.</p>	A USD 21,000 activity with USD 7,000 for each quarter 2 – 4 QTR 09.
TO 09-1: Review and Evaluation of the Niuafu'ou SEIS	10,000		A PAS is yet to be developed.	
TO 08-1: Feasibility Study of the rehabilitation of the Mango and Mo'unga'one PV projects		Findings from the study were used as inputs into the supply tender documents.	<p>The feasibility study report was finalised and distributed during 1 QTR 09.</p> <p>4 locals participated in the study for capacity building and exposure / training purposes.</p>	With a budget of USD 18,000
TO 09-2: Technical evaluation of the solar installations in Mango & Mo'unga'one		Tender for the supply contract was awarded. Installations of 60 solar home systems at Mango and Mo'unga'one were completed during 2 QTR 09.	A PAS was drafted and commented upon but yet to be finalised and circulated for PSC endorsement.	With a budget of 3,000
TO 09-3: Awareness Training for solar water pumping and Solar Street lighting	11,000	The villages of Lakepa, Nakolo, Ha'alalo, Fu'amotu in Tongatapu (capacity of around 500kWp) and also Leimatu'a, Holonga and Pangaimotu in the Vava'u Group and Pangai, Hihifo	<p>A PAS has been drafted, reviewed, circulated and endorsed by the PSC during 2 QTR 09.</p> <p>Activity will be conducted 3 QTR 09</p>	A USD 11,000 activity for the 2 QTR 09.

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
		<p>and Ha'ato'u in the Ha'apai have been installed with solar water pumps.</p> <p>Fahefa, Niutoua, Holopeka and Faleloa are in the queue.</p> <p>The Chinese Government through the Nuku'alofa Township Reconstruction Development project has endorsed solar street lighting to be installed Around the Nuku'alofa township.</p>		
TV 09-1: Support to TEC's outer island grid-connected renewable energy project		<p>Completed the installation of a e8-funded 40 kW grid-connected PV system at Funafuti in 2008.</p> <p>Tender for the supply, installation and training with respect to the 46 kW system at Motufoua Secondary School was issued.</p> <p>Separate contract with PIGGAREP on the training.</p> <p>Supply, installation and training contracts were signed during 2 QTR 09.</p>	<p>A PAS for USD 55,000 was endorsed via PSC 5.</p> <p>Activities include monitoring and training support to both the Funafuti and Vaitupu grid-connected PV systems, study tour and participation at the Niue grid-connected PV system workshop.</p> <p>A participant each from the Tuvalu electricity Corporation is confirmed for the Niue training (18-24 July) and Vanuatu tour (3-7 August).</p>	<p>A 3QTR 09 activity with a budget of USD 20,000</p> <p>Funafuti project budget is approximately USD 412,000.</p>
TV 09-2: Studies of wind potential in the outer-islands	10,000	<p>Completed the wind monitoring assessment at Funafuti. The tower and anemometer supplied under PIEPSAP will be shifted and used in the outer island – see TV 09-4.</p>	<p>A PAS was drafted and reviewed and will be finalised for circulation among the PSC in 2 QTR 09.</p>	<p>A USD 10,000 activity for 2 QTR 09.</p>
VA 09-1: Technical training on the O&M of the Sarakata hydropower project		<p>The additional 600 kW of hydropower capacity was commissioned in January.</p> <p>The official handing over ceremony of the Sarakata hydropower will be on 25th May 2009.</p>	<p>Training was completed in January. Trainee has yet to submit his training report.</p> <p>2 PAS for an awareness / consultation training on the risks to the Sarakata</p>	<p>A budget of USD 3,000</p>

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
			hydropower project and a social, economic and technical evaluation of the project in Jan 2010 have been drafted.	
VA 09-2: Review of the 2002 Talise Mini Hydro Feasibility Study		<p>The baseline are in 3 components:</p> <ul style="list-style-type: none"> - Wind Resource Monitoring - Solar PV Rehabilitation - Talise Hydropower Project <p>The recruitment process for a local expert as Project Coordinator has commenced with the appointment expected to be made in June.</p> <p>Scoping missions to 6 provinces to identify sites for installing the wind monitoring equipments will commence in June.</p>	<p>The consultancy contract for the Talise feasibility study was awarded to GHD of Australia for a maximum of USD 88,387 (may vary according to actual costs).</p> <p>2 local experts will participate and receive exposure training in the study.</p> <p>The Inception Report will be finalised next in May and the field mission will take place in May too.</p>	The big difference in the budget approved in the 2009 workplan (USD 50,000) and the successful tenderer's offer is noted.
VA 09-3: Feasibility Study of the Lowanau River (Tanna) hydro resource potential			A PAS is yet to be developed.	A USD 20,000 activity with USD 10,000 each for 3 & 4 QTR 09.
VA 09-4: Community Training on Biofuel at NE Malekula, Saratamata and Vanualava			A PAS is yet to be developed.	A USD 10,000 activity with USD 5,000 each for 3 & 4 QTR 09.
REG 08-1: Conduct training workshop on RET Application in Small Is States		Partly funded by Taiwan	Workshop completed and was attended by 27 people. Final report produced and distributed.	
RE 09- 1: REP-5 / PIGGAREP Workshop on grid-connected PV at Niue (Linked to NI 09-02 & TV 09-2)	35,000	<p>A follow-up to REG 08-1 & 2. Completed PPA-e8 RE workshop in Nov 2008. Selected outstanding participants from workshop to come to Niue.</p> <p>Contract for the supply and installation</p>	<p>Workshop programme has been drafted with REP-5. Participants have been selected.</p> <p>Originally planned for May 4-8 but moved to 11-17 July due to late arrival of the solar PV equipments at Niue. Further</p>	<p>A USD 35,000 activity for 2 QTR 09 but will now be conducted 3 QTR 09.</p> <p>Activity has been moved to 3 QTR due to late arrival of the PV equipment in Niue.</p>

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
		of a 52 kW grid- connected PV system under REP-5 was awarded. Installation is planned for 3 QTR 09.	moved to and now confirmed for 18-24 July due to non-availability of seats to and from Niue.	

Achievements to Date in relation to the Outcome Indicators

Output and Impact Indicators	Achievements to Date
<ul style="list-style-type: none"> i) 10 completed monitoring studies by 2012 ii) 4 RET application projects developed by 2015 iii) 10 completed feasibility studies (FS) iv) 7 FS leads to an approved, financed and implemented RET application projects by 2012 v) 5 completed demo projects that received TA from PIGGAREP by 2012 vi) 221 kW installed and integrated into existing and new power systems by 2012 vii) 2 ESCOs / IPPs engaged in the RET demo projects by 2012 viii) 16,000 additional people in PICs served with RE through the demo projects by 2012 ix) 4 PURE projects designed and implemented by 2012 x) 10 additional social services (schools, health centres, telecommunication, etc) in PICs using RE by 2012 xi) 10 completed training courses / workshops by 2012 xii) 200 trained people on RE assessments and RE system design, installation and O&M by 2012 xiii) 2 trained people establish own RE business by 2012 xiv) 5 RET application projects designed, implemented, operated and managed by local RE experts by 2012 xv) 2 draft quality and technical standards on grid-connected solar PV system components and installations xvi) 1 standard approved by 2012 	<ul style="list-style-type: none"> i) 8 hydro surveys in Fiji, 1 hydro monitoring station installed at Tafitoala and 1 reference wind monitoring station installed at Upolu, Samoa. 2 years of wind monitoring at Funafuti was completed in May 2009 with plans to continue with monitoring at Niulakita, the most southern island of Tuvalu, close to Fiji. 1 wind monitoring commenced at Anabar, Nauru. 1 hydro data collection commenced at Tina, Solomon Is. Wind monitoring sites identified at Torba, Malampa, Sanma and Penama, Vanuatu. Wind surveys finalised to begin in the Cook Is and biofuel surveys finalised to begin in PNG and the SI. i) 2 micro hydro projects currently under design (Buca and Naikorokoro - Fiji) ii) 2 (Nauru wind & Vanuatu Talise) feasibility studies began in 2 QTR. Solomon Is biofuel and hydro feasibility studies finalised to begin 3 QTR 09. iii) iv) Installation of 1 demo project in Tonga completed. Demo projects identified in Tuvalu and Vanuatu. Biogas demo projects in Fiji. v) 22 kW of installed solar home systems (14.2 Fiji and 7.8 Nauru), 40 kW of grid connected PV installed at Funafuti, Tuvalu and 1.7 kW of PV and 6 kW of biodiesel installed in the SI. 6 kW of solar home systems and .3 kW of solar street lights installed in Tonga and 1.5 kW in the SI. 4 biogas digesters installed at 4 schools in Fiji. 52 kW of grid-connected PV are still being finalised for Niue and Tuvalu (46 kW) for installation later in the year. vi) vii) 250 people served by the installed demo project in Tonga. xxx people at Santo served with RE from the new additional Sarakata capacity. 2,000 students at 4 schools in Fiji use biogas for cooking. viii) 3 Demo projects identified (Tonga, Tuvalu and Vanuatu)

Output and Impact Indicators	Achievements to Date
	<ul style="list-style-type: none"> ix) 1 health centre (Aola in SI) and 1 school (Nauru College) installed with a grid connected RE system. 1 school (Buruku Adventist School in the SI installed with solar home systems. 4 schools received biogas digesters in Fiji. 4 churches and 2 schools installed with solar PV in the Tonga demo project. 4 schools in Kiribati will be installed with solar water pumps with Italian funding. x) RET Application workshop for SIS completed, training of trainers on biogas completed in Fiji. Solar PV workshop completed in PNG. National training workshops in Kiribati, Tonga, Tuvalu (Motufoua) and the SI as well as the regional grid-connected workshop at Niue are in the 2009 work plan and are at various stages of being finalised to be carried out. xi) 27 participants in the RET Application workshop for SIS. 20 participants in the Fiji biogas workshop. 14 participants in the PNG workshop. xii) Fred Conning of the Solomon Is has established the Pidgin Holdings Ltd in the Solomon Is and Garaio Gafiye of PNG will establish own RE business at the later half of 2009 xiii) xiv) xv)

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline Activities	Status of incremental activities	Comment
IMMEDIATE OBJECTIVES/OUTCOMES 2: Expansion of the market for RET applications				
FJ 09-2: Establishment of the Biogas market		<p>Ten biogas digesters will be constructed by locals under this Biogas Programme.</p> <p>Training of 20 local trainers in biogas construction completed.</p> <p>A biogas certification training programme has been put in place as</p>	A PAS has been drafted but not yet finalised.	<p>A 3 QTR 09 activity with a budget of USD 10,000</p> <p>Queen Victoria School (QVS) QVS is a boarding school with a roll of about 700 students. It has been using LPG for cooking which costs \$2,000 per month. The school has a cattle farm as source of milk for the</p>

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline Activities	Status of incremental activities	Comment
		<p>part of the program.</p> <p>Four sites have been assessed and selected, the builders have been identified and four teams that ranges from two to five builders have been selected from the trained trainers; materials purchased and transported to the four sites, and the actual construction work has commenced and completed at Queen Victoria School, Ratu Kadavulevu School, Wainiyabiya Settlement and Namatakula village. The works were completed in these 4 schools by end of June 2009.</p>		<p>school's needs and a piggery farm as food source. There are some 200 pigs kept in a well maintained concrete shed. A 15m³ digester is currently being constructed at the school.</p>
SI 09-3 : Biofuel Development and Expansion	7,500	<p>SI government co-financing of USD 100,000.</p> <p>Cabinet in March approved the setting up of a Task force to spearhead the bio-fuel development program.</p> <p>Task Force will have its inception meeting in QTR 09 and will submit its mandate and budget to Cabinet.</p>	<p>The PAS was endorsed by the PSC via PSC 5 for USD 39,000.</p> <p>Activity include consultancy study and study tours.</p> <p>3 participants confirmed for the study tour to Vanuatu's biofuel development on 3 – 7 August 2009.</p> <p>The ToR and the request for proposals was finalised and issued during 2 QTR 09. The evaluation process began during the quarter and will be finalised with the contract signed during 3 QTR 09.</p>	<p>A USD 20,000 activity with 2 QTR (7,500), 3 QTR (7,500k) and 4 QTR (5,000)</p>

Achievements to Date in relation to the Outcome Indicators

Output and Impact Indicators	Achievements to Date
<ul style="list-style-type: none"> i) 5 technically feasible RE projects in the PICs identified and studied by 2012 ii) 2 financially and commercially viable RE projects in the PICs designed and prepared for donors, financiers and investors by 2012 iii) 8 funded and implemented RE projects by 2012 iv) USD 13 million of investments in new RE installations by 2012 v) 2 completed training courses/workshops on the manufacturing and repair of RET system components by 2012 vi) 50 trained people on manufacturing and repair of RET system components by 2012 vii) 30 trained people engaged in the manufacture and repair of RET systems components by 2012 viii) 2 RET application projects in the PICs employing locally manufactured components by 2012 ix) 1 commercially viable equipment manufacturers/fabricators and suppliers of RET system components in the PICs by 2012 x) USD 50,000 of sales of locally manufactured/fabricated RE system components in the PICs by 2012 xi) 3 power utilities in the PICs that have RE Advisers/Units by 2012 xii) 1 power utility with corporate-approved business plans that include RE utilization and marketing activities by 2012 xiii) 3% increase in the financing for incorporation of RE in power generation in the PICs by 2012 xiv) 1 commercially viable RESCOs in the PICs by 2012 xv) 5 completed training courses/workshops on basic O&M of RET system installations and components by 2012 xvi) 80 trained rural residents on basic O&M of RET system installations 	<ul style="list-style-type: none"> i) 1 study has been completed (Motofoua grid-connected PV project at Vaitupu, Tuvalu) and the Talise hydropower feasibility study in Vanuatu is currently underway. ii) iii) Tonga's proposal on RE Regulations to REEEP's 7th Programme Cycle approved for 100 k Euro. SI and Tuvalu proposals are on reserve list. Revised and resubmitted Action Fiche to the EU-funded EDF 10. iv) The Fiji Electricity Authority (FEA) and the Chinese Development Bank (CDB) signed a F\$132.45 million (US\$70 million) loan agreement to commence the construction of the Nadarivatu Hydropower project. A discussion of a USD 40 million hydropower project at Tina in the Solomon Is has commenced. v) 1 completed workshop in Fiji on the construction and maintenance of biogas digesters. 1 completed PV training workshop in PNG. vi) 20 people trained in Fiji on the construction and maintenance of biogas digesters. 14 people trained on solar PV in PNG. vii) 20 trained biogas technicians in Fiji have now completed the construction of 4 digesters in 4 schools viii) ix) x) xi) PPA has commenced the recruitment process for a RE Adviser to work for the member power utilities. The Electric Power Corporation of Samoa recruited a Renewable Energy Officer in 2008 and in May 2009 employed a wind power engineer and a hydro field supervisor. xii) Completed study for the establishment of a RE & EE Unit at the Tuvalu Electricity Corporation. Tuvalu's proposal to the REEEP 7th Programme Cycle was to fund a RE Adviser.

Output and Impact Indicators	Achievements to Date
xvii) and components by 2012 xvii) 6 trained rural residents that are actually operating and/or maintaining RET system installations and components in rural areas in the PICs by 2012	xiii) xiv) xv) Workshops on basic O&M of RET system installations and components planned for Kiribati, SI, Nauru, Niue, Tonga and Tuvalu. Workshops on risks / hazards awareness relating to the Sarakata Hydropower Project is planned for Vanuatu. xvi) Training on solar street lights and solar water pumps in rural villages planned in Tonga for 3 QTR 09. xvii)

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
IMMEDIATE OBJECTIVES/OUTCOMES 3: Enhancement of institutional capacity to design and implement RE				
FJ 09-3: Technical Assistance (through consultancy) for strengthening the management of the Energy Information System	10,000		A PAS was drafted and reviewed. Awaiting final version to be circulated for PSC endorsement by 2 QTR 09.	Was 5,000 for 1 QTR and another 5,000 for 3 QTR 09.
KI 09-2: Review of KSEC, Restructure, On the Job Business Training, Strategic Planning, Project Preparation, Management, Monitoring and Evaluation	15,000		A PAS is yet to be developed.	A USD 15,000 for 2 QTR 09.

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
KI 09-3: Migrating RESCO Manager to an open source platform.	10,000	UNDP has approved a project proposal on Maintaining Renewable Energy Systems in Kiribati through Technical Training for USD 35,000. Awaiting signing of Face form for processing payment.	A PAS was developed and endorsed by PSC in 2008. PMO awaiting clarifications on the ToRs, the operationalisation of the consultancy contracts and the complementarity with the co-financing activities.	A USD 60,000 activity for 2 (10,000), 3 (20,000) & 4 QTRs (30,000) 09.
NA 09-2: Energy Database		SOPAC assisted Nauru to put establish its Energy Data Base. A follow up SOPAC mission to Nauru is planned for 13-25 July.	A PAS was drafted requesting mostly the purchase of computers. Advise was provided to Nauru to redesign PAS in order for the PIGGAREP to provide database training and other related activities.	A USD 10,000 activity for 1 QTR 09
NA 09-3: Training needs assessment for RE	40,000	PPA has advertised the consultancy to conduct the training needs assessment in its member power utilities, including Nauru's.	A new activity should be formulated to replace this training needs assessment in Nauru's work plan.	A USD 40,000 activity for 2 QTR 09.
TV 08-1: Study the best ways to establish a RE and EE Unit at the Tuvalu Electricity Corporation.		Tuvalu's REEEP proposal in Outcome 7 is to operationalise the RE and EE Unit. t	Completed in Sept 2008 for approximately USD 46,000. Report finalised and endorsed by the TEC Board.	
TO 09-4: Technical Assistance to the Tonga Energy Roadmap: 2010 – 2020		The Tonga govt has set a target of achieving 50% of grid-based electricity from RE within 3 years. The World Bank and Tonga are drafting an Interim Energy Sector Technical Report to be discussed in Sept 09 leading to drafting of the final Road Map to be completed by Feb 2010.	A PAS is yet to be developed.	A USD 15,000 activity for 3 QTR 09. Original activity was to review and confirm the EDF 10 feasibility studies. Activity has been redesignated and still include relevant TA to the EDF 10 project too.

Achievements to Date in relation to the Outcome Indicators

Output and Impact Indicators	Achievements to Date
<ul style="list-style-type: none"> i) 2 PICs that have National Energy/Climate Change Plans and Energy Laws and Policies in place and enforced by 2011 ii) 2 PICs have set GHG emissions reduction and/or RE utilization targets by 2011 iii) 3 PICs that annually prepare their national energy balance based on regularly collected energy supply and consumption data by 2010 iv) 1 PIC with annual earmarked budget allocations for RET-related training in national energy plans starting 2009 v) 3 PICs with established national coordination system & mechanism on energy matters that include the private sector by 2010 vi) 3 proposed energy policies and laws in each PIC each year that were deliberated through the established national energy coordinating system and mechanisms starting 2010 vii) average of 3 energy policies and laws in each PIC each year that were approved and enforced through the established national energy coordinating system and mechanisms by 2012 viii) 8 competitive procurement processes each year for goods & services in the context of national energy activities where relevant national focal points are represented starting 2008 ix) 1 RET projects/programs with parallel funding and/or cost sharing by 2012; 	<ul style="list-style-type: none"> i) The Kiribati Cabinet endorsed its National Energy Policy in May 2009. Consultations on a draft action plan for the Gilbert Group completed. A draft national biofuel policy for Fiji was approved by the National Biofuel Steering Committee for initial circulation to Government Stakeholders for comments. Niue Cabinet has approved the drafting of a Climate Change Policy. SPREP has been approached to help, PIGGAREP is willing to support and is awaiting a ToR from Niue in order to identify a consultant to carry out this work. ii) Tonga in 2008 adopted a RE target of 50% within 3 years. PIGGAREP RE paper to the PEMM highlighted the importance of having voluntary and achievable targets. iii) Nauru is assisted by SOPAC to establish its Energy Database. Energy Supply and Consumption Data collected for the GHG inventory chapter of the PICs' UNFCCC National Communications. iv) SI Cabinet approved the formation of a Biofuel Task Force. A Cabinet sub-committee on RE established in Tonga in March 2008, following the revival of the National Energy Committee in 2008. v) Regulations for the Tonga RE Act are planned to be finalised through the National Energy Committee. vi) Tonga's National Energy Committee was the final clearing house for Tonga's RE Act before submission to Parliament. The Act was approved by Parliament

Output and Impact Indicators	Achievements to Date
<p>x) 2 completed training courses/workshops on energy planning and energy project coordination and management (EP&EPC/M) by 2012</p> <p>xi) 6 trained people on EP&EPC/M by 2012</p> <p>xii) 6 trained people that work on EP&EPC/M either in the government or in the private sector in the PICs by 2012</p> <p>xiii) 6 successfully implemented energy projects, in general, and RET system application projects, in particular that were planned, coordinated, or managed by trained EP & EPC/M people in the PICs by 2012</p> <p>xiv) 3 PICs with well-staffed Energy Offices with clear mandates by 2010</p> <p>xv) 3 PICs with EOs equipped with updated databases for planning and policy making by 2010</p> <p>xvi) 3 PICs with EOs coordinating the implementation of their respective country's national energy/climate change mitigation plan by 2010</p> <p>xvii) Average of 3 energy policies formulated each year by the EO in each PIC starting 2010</p> <p>xviii) 8 additional EO positions funded by national budgets by 2012</p> <p>xix) 2 national energy databases reviewed and revised by 2010</p> <p>xx) 3 PICs maintain and use their national energy database every year starting 2009</p> <p>xxi) 2 completed workshops on energy data gathering system and operation and maintenance of the energy database</p> <p>xxii) 2 implemented energy policies and projects in the PICs that were based on the information in the energy database by 2012</p> <p>xxv) 1 national energy balances prepared by 2012</p> <p>xxvi) 3 national energy balances updated by 2012</p> <p>xxvii) 1 completed regional synthesis reports of energy sector GHG emission inventory by 2012</p> <p>xxviii) 33% reduction in regional energy sector GHG emissions (compared to that in 2005) in 2015.</p>	<p>in 2008.</p> <p>viii) Tender for the supply of solar home systems for Mango and Moúngaóne in Tonga, Motufoua PV in Tuvalu, Talise feasibility study and 4 activities in the Solomon Is were through competitive procurement processes</p> <p>ix) TERI and SOPAC are planning a regional energy planning workshop for 24-28 August.</p> <p>x)</p> <p>xi)</p> <p>xii)</p> <p>xiii)</p> <p>xiv)</p> <p>xv)</p> <p>xvi) Tonga Energy Division is coordinating the implementation of the kingdom's national energy / climate change mitigation plan</p> <p>xvii)</p> <p>xviii) 3 Energy Planner and 3 Energy Officer positions established and filled at the Tonga Energy Division in early 2009.</p> <p>xix) Samoa's energy database reviewed and revised by SOPAC in 2008.</p> <p>xx) Fiji is recruiting a data entry clerk to support its data base work.</p> <p>xxi)</p> <p>xxii)</p> <p>xxiii)</p> <p>xxiv)</p> <p>xxv)</p> <p>xxvi)</p> <p>xxvii) Energy Supply and Consumption Data collected for the GHG inventory chapter of the PICs' UNFCCC National Communications.</p> <p>xxviii)</p>

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
IMMEDIATE OBJECTIVES/OUTCOMES 4: Improvement of the availability of funding for existing and new RE projects				
NI 09-3: RE and Existing Tariff Study		Contract for the supply and installation of a 52 kW grid-connected PV system under REP-5 was awarded. Installation is planned for 3 QTR 09.	A new PAS merging NI 09-2 & NI 09-3 was drafted, reviewed and endorsed by the PSC. Awaiting development of the ToR for the study by the Niue authorities.	A USD 40,000 activity for 4 QTR 09. Now merged with NI 09-2.

Achievements to Date in relation to the Outcome Indicators

Output and Impact Indicators	Achievements to Date
<ul style="list-style-type: none"> i) Completed study report on the real cost of electricity and other RE resources by 2010 ii) 1 PIC utilizes the energy pricing tool and the knowledge about the real cost of energy in their energy policy and decision making processes by 2012 iii) 11 government-supported RE-based rural productivity projects in 2012 iv) 5 RET application projects specifically designed to improve productivity and income in rural areas by 2012 v) 5 private sector entities investing in PURE and/or SURE projects in rural areas of the PICs by 2012 vi) 5 financial/banking institutions that participated in the regional 	<ul style="list-style-type: none"> i) 2 base tariff studies were completed by PIEPSAP in 2007 for the SI Electricity Authority and the Tuvalu Electricity Corporation. ii) Tuvalu Electricity Corporation approved setting up a RE and EE Unit based on the base tariff study recommendations iii) iv) v) vi) vii) viii) ix)

Output and Impact Indicators	Achievements to Date
<ul style="list-style-type: none"> vii) workshop on RE investments viii) 50% of banks and financial institutions in the region that have committed financial support to RET application projects by 2012 ix) 1 training course for the banking/financial institutions in the PICs designed and conducted each year starting 2010 x) 20% of targeted financial institutions in the PICs that committed to support RET application projects by 2012 xi) 5 applicable RE financing schemes identified and designed by mid-2010 xii) 2 identified and/or designed applicable innovative financing schemes that are acceptable to banks and financial institutions in the PICs by end 2010 xiii) 2 banks and financial institutions in the PICs that have adopted innovative financing schemes developed under the PIGGAREP by 2012 xiv) 1 existing operational funds in the PICs reviewed by end 2009 xv) 2 committed seed fund contributors to a regional/national RE Fund (REF) by end 2012 xvi) USD .5 million of confirmed seed funds for the REF by mid-2011 xvii) 2 completed and PICs-approved design of REF including the associated IRRs by end 2011 xviii) 1 operational regional/national REF supporting the implementation of RET application in the PICs by 2012 	<ul style="list-style-type: none"> x) Samoa is setting up a Clean Energy Fund as part of its ADB Power Expansion Project xi) xii) xiii) Samoa is setting up a Clean Energy Fund as part of its ADB Power Expansion Project xiv) xv) xvi) xvii) Samoa is setting up a Clean Energy Fund as part of its ADB Power Expansion Project

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
IMMEDIATE OBJECTIVES/OUTCOMES 5: Strengthened legal and regulatory structures in the energy and environmental sectors				
FJ 09-4: Technical Support to the development of energy legislation	5,000	Tenders were invited for this consultancy. Five tenders were received and further clarifications are being sought from the bidders. Once this information is received, the Department will complete its	A PAS is yet to be developed for PIGGAREP's incremental support.	An activity with USD 18,000 support from the PIGGAREP (2 QTR- 5,000, 3 QTR-8,000 & 4 QTR – 5,000)

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
		evaluation and prepare a submission to the Tender Board for approval. The Department anticipates that the project will be completed by December 2009.		
KI 09-4: Consultations on the National Energy Policy and drafting of an Action Plan		The KNEP has been drafted with the assistance of SOPAC. It has been endorsed by the Kiribati Cabinet. A consultation workshop on a draft action plan for the Gilbert group has been completed 2 QTR 09.	A PAS was drafted and reviewed during the PAS workshop in January. PAS is yet to be finalised.	A USD7,000 activity to cover travel of 3 officers to Christmas Is to conduct consultation meetings. Kiribati advised to prepare a draft Action Plan in Tarawa to base the consultation on.
TV 09-3: Support implementation of Policy and Strategic Action plan		The Tuvalu Energy Office enquired about PIGGAREP assistance during 2 QTR 09. Have been advised to draft a PAS and to seek TEC assistance if needed.	A PAS is yet to be developed.	A USD 12,500 activity with USD 6,250 each for 3 & 4 QTR 09 respectively.

Achievements to Date in relation to the Outcome Indicators

Output and Impact Indicators	Achievements to Date
<ul style="list-style-type: none"> i) 11 PICs with endorsed national energy / RE policy ii) 5 strategic energy action plans have RE activities that are costed and financed iii) 5 RE policy studies conducted each year in each PIC starting 2009 iv) 1 formulated RE policies (including PURE/SURE policies and fiscal incentives) proposed to the government in each PIC annually starting 2009 v) an average of 1 proposed RE policies (including PURE/SURE policies and fiscal incentives) that are approved and adopted annually in each PIC starting 2010 	<ul style="list-style-type: none"> i) Kiribati's national energy policy endorsed by Cabinet ii) The Action Plan for the Gilbert Group was drafted during 2 QTR 09. iii) iv) v) vi) vii) The PAS for Niue's electricity pricing study drafted and reviewed viii) ix)

Output and Impact Indicators	Achievements to Date
vi) average of 1 sets of policy IRRs (inclusive of the legislation) that are approved in each PIC annually starting 2010 vii) 2 completed comprehensive energy pricing studies by 2012 viii) 2 PICs utilizing the pricing studies in their national energy planning and policy making by 2012 ix) 2 RE policies (including PURE/SURE) that are based on the comprehensive energy pricing studies by 2012.	

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
IMMEDIATE OBJECTIVES/OUTCOMES 6: Increased awareness and knowledge about RE among key stakeholders				
CI 09-3: RE / Green Award Programme for the tourism sector			A PAS is yet to be developed.	A 4 QTR 09 activity for USD 5,000
FJ 09-5: Technical visits to RESCO business operations	15,000	See FJ 09-1 above under Outcome 1	This activity is included in the PSC-endorsed PAS for FJ 09-1: <i>Technical, economic & environmental evaluation of solar home systems project</i> (see Outcome 1). Preliminary contacts and planning have been made with the Haápai Solar Electricity Inc for this visit to be made in October 2009	A USD 15,000 and USD 10,000 for 2 QTR 09 and 3 QTR 09 respectively.

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
KI 09-5: Public awareness campaigns	3,000		A PAS is yet to be developed.	A USD 12,000 activity for the year with USD 3,000 quarterly. The big difference in the budget approved in the 2009 workplan and that in the PAS is noted.
NI – Awareness programs on all sectors radio /TV / local newspaper / ¼ly / weekly bulletins	5,000		A PAS is yet to be developed.	A USD 15,000 with USD 5,000 each for 2, 3 & 4 QTR 09 respectively.
SA 08-1: National energy awareness campaign day			Completed at a cost of USD 9,000 and with the participation of about 400 students. Activity has been evaluated, documented and posted to the PIGGAREP web page.	
SA 09-3: National energy awareness campaign day	10,000		A PAS was drafted , reviewed and finalised for PSC endorsement 3 QTR 09.	A USD 10,000 activity for 2 QTR 09.
SI 09-4: RE Training for students at Willies and SICHE on Electrical Trade	2,000	Completed the installation of Aola Rural Health Centre Hybrid system (in Guadalcanal Province). This hybrid system comprises of 1.7 kW solar PV system and a 6 kW biodiesel generator set. 12 RE technicians recruited by the Energy Division.	A PAS is yet to be developed. A PAS for USD 36,000 (20k for training and 16k for the RE Information Centre – SI 09-5) was endorsed via PSC 5. Letter from SPREP to Dept of Energy confirming financial support was sent 25/3/09. The ToR and the request for proposals was finalised and issued during 2 QTR 09. The evaluation process began during the quarter and will be finalised with the contract signed during 3 QTR 09.	A USD 8,000 activity with USD 2,000 quarterly. The big difference in the budget approved in the 2009 workplan and that in the PAS is noted.
SI 09-5: Setup of RE Information and Exchange Centre	20,000	Construction of the Renewable Energy Information Centre is well underway. Most of the main structural works are	A PAS for USD 36,000 (16k for the RE Information Centre and 20k for training and – SI 09-4) was endorsed via PSC 5	

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
		near completion and the final touches would be followed. This will go along with the installation of the RE equipment and the laboratory furnishing.	during the quarter. Letter from SPREP to Dept of Energy confirming financial support was sent 25/3/09. The ToR and the request for proposals was finalised and issued during 2 QTR 09. The evaluation process began during the quarter and will be finalised with the contract signed during 3 QTR 09.	
TV 09-4: Analysis of wind data and Preparation of a wind fuel savings project for Funafuti Island		Completed 1 year of wind monitoring assessment at Funafuti under the PIEPSAP.	A PAS was drafted and reviewed and will be finalised for circulation among the PSC in 2 QTR 09.	A USD 50,000 activity for the 3 QTR 09. Equipments will be shifted and installed in an outer island – see TV 09-2.
TV 09-5: Public demonstration of Biodiesel, todi ethanol, gasification production Dissemination of biogas technology introduced by PIEPSAP Education tool for children in Tuvaluan, USP & high school classes		The construction of the Amatuku Training Centre on Renewable Energy with a new piggery and biogas digester was completed in late 2007. Completed awareness workshop attended by more than 80 people. Printed and distributed 200 copies of the Our Planet Under Water comic in the Tuvalu language. Picture exhibition attended by more than 500 Tuvaluans. DVD distribution of events relating to environment and renewable energy in Tuvalu. Biodiesel and gasifier demonstration completed during 2 QTR 09 at the Tuvalu Maritime Training Institute.	A PAS is yet to be developed.	A USD 10,000 activity with USD 5,000 each for the 3 & 4 QTR 09 respectively. ALOFA Tuvalu activities.

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline activities	Status of incremental activities	Comment
VA 09-5: Technical visits / study tour to community based pico/micro hydros in Solomon Is, Fiji and / or PNG	10,000		A PAS is yet to be developed.	A USD 25,000 activity with USD 10,000 for 2 QTR 09 and USD 15,000 for 3 QTR 09.
REG 08-2: Regional RE training workshop		e8-PPA workshop completed in Nov 2008 and attended by 24 participants from the power utilities.	<p>PIGGAREP funded the participation of a participant each from the Kiribati and Tonga solar utilities.</p> <p>Participants who did well at the PPA workshop are being invited to a joint EU-REP 5 / PIGGAREP training workshop at Niue on 18-24 July.</p>	
REG 09-2: Technical visits to RE developments in Vanuatu			<p>Linked to the PSC-endorsed PAS by Fiji (FJ 09-1), Solomon Is (SI 09-3) and Tuvalu (TV 09-1).</p> <p>PAS for other interested PICs has not been developed and / or yet to be endorsed by the PSC.</p> <p>Date has been fixed with the Vanuatu Energy Office for July 27 – 31.</p> <p>Interested PICs have been requested to send specific needs to assist in the planning and coordination of the event.</p>	A USD 40,000 activity for 3 QTR 09.
REG 09-3: Study tour of the Ha'apai Solar Electricity Inc.			<p>Linked to the PSC-endorsed PAS by Fiji (FJ 09-1), Solomon Is (SI 09-3), Kiribati (solar water pumping PAS) and Tuvalu (TV 09-1).</p> <p>PAS for other interested PICs has not been developed and / or yet to be endorsed by the PSC.</p>	A USD 40,000 activity for 4 QTR 09.

Achievements to Date in relation to the Outcome Indicators

Output and Impact Indicators	Achievements to Date
<ul style="list-style-type: none"> i) Average of 1 RE/RET awareness raising and promotion programs designed and carried out in each PIC each year starting 2009 ii) 10 power utilities in the region that are using RE in their power generation and/or operations by 2012 iii) 300 households in rural areas are using RE for their electricity and non-electricity needs by 2012 iv) 4 study tours conducted on RET applications and other non-conventional energy systems by 2012 v) 10 additional PIC nationals with a Certificate, Diploma, and/or university degree on the technical aspects of RE by 2012 vi) No of demonstration projects that achieved set technical and financial performance (e.g., MWh generation, CO2 emission reduction, payback period, IRR) targets by 2012 vii) 300 copies of the demonstration project report disseminated by 2012 viii) 20 project developers that utilize the report as reference for their RET application projects by 2012 ix) 2 RET application projects that replicate the demo projects by 2012 x) 2 established and operational RE Information Units in the region by 2012 xi) an average of 30 requests for information by other organizations (local and abroad) served by each RE Information Unit starting 2010 xii) 80% of clients of each RE Information Unit that are satisfied with the services provided starting 2010 xiii) 10 public and private entities in the region that are using RE to meet (fully or partly) their energy needs starting 2012 xiv) correctly identified collective CO2 emission reductions realized each year by the top 3 awardees starting 2010 xv) 300 visits to the PIGGAREP webpage each year starting 2009 xv) 80% of website users each year are satisfied with information contained in website starting 2009 xvi) 12 SPREP monthly articles on energy / climate change distributed each year starting 2009 xvii) 10 people and institutions that are familiar with the PIGGAREP each year starting 2009 	<ul style="list-style-type: none"> i) 2 PICs (Kiribati & Samoa) have awareness activities in their 2009 work plan. ii) 7 power utilities (Fiji, Nauru, PNG, Samoa, SI, Tuvalu and Vanuatu) have RE integrated into their grid. Niue will have grid connected RE power on 3 QTR 09. iii) 200+ households in Fiji are being installed with SHS with 400 more awaiting tender board decisions. XXX households in Santo get electricity from the newly commissioned Sarakata hydropower expansion. Sixty (60) households at Mango and Mo'unga'one at the Ha'apai Group of Tonga had been with SHS during 2 QTR 09. iv) 1 study tour by Fiji to Kiribati is planned. 1 study tour by Fiji, SI, PNG, SI, Samoa and Tuvalu to Vanuatu is planned for 3 QTR 2008. 1 Study tour to the Ha'apai Solar Electricity Inc. is planned for 4 QTR 09. v) 12 trainees in the SI are to undergo electrical certificates training with Willies Electrical. 1 student from the Fiji Dept of Energy currently doing MSc on Energy Planning and Policy. 1 student from the Tonga Energy Division is currently doing PhD on renewable energy at the Uni. of NSW. vi) vii) viii) ix) x) Construction of the SI RE Information Unit is currently underway and lab equipments and RE equipments have been ordered xi) xi) xvi) 1 health centre (Aola in SI) and 1 school (Nauru College) installed with a grid connected RE system. 1 school (Buruku Adventist School in the SI installed with solar home systems. 4 schools are to receive biogas digesters in Fiji. Schools in Kiribati will be installed with solar water pumps with Italian funding. xiv) xv) Still not able to put in a counter on the PIGGAREP page! xvi) 2009 is SPREP's Year of Climate Change with various promotional activities, including some on renewable energy

Output and Impact Indicators	Achievements to Date
xviii) 80% of the stakeholders/target groups in the PICs fully understand the PIGGAREP by 2011	xvii) Anyone seriously working on RE in the region will come across PIGGAREP is discussions with others in and outside of the region. xviii) There is more and more appreciation of the PIGGAREP from its publicity work, tenders on joint activities with IUCN, REEEP publications and newsletters, etc.

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline Activities	Status of incremental activities	Comment
IMMEDIATE OBJECTIVES/OUTCOMES 7: Effective Management of the PIGGAREP				
INDICATOR: Project Activities are implemented within budget and on time, in close collaboration with other related and parallel activities in the PICs.				
RE 09-4: Regional Workshop on writing Project Activity Summary / Project Proposals	40,000		Completed and other than Nauru, 10 PICs attended. A workshop report has been produced.	
Effective Project Management			Reviewed the Talise draft inception report and processed payments. Coordinated the Nauru wind monitoring installation. Finalised four request for proposals for the Solomon Is. Negotiated and signed training contract for the TVNEIP Provided confirmation letter of financial support to Cook Is, Kiribati and the Solomon Is. Provided co-financing letter for Tonga's approved project in the REEEP's 7 th Programme Cycle.	

Work Plan Activities	2 QTR 09 Budget (USD)	Status of baseline Activities	Status of incremental activities	Comment
Effective Project Management			Assisted in an EU audit of SPREP. Assisted with the SPREP inputs to the Regional Integration Framework negotiations.	
New funding for RE in the PICs			Carried out another review of the SOPAC-SPREP EDF 10 Identification Fiche (IF) in early June following comments from the EU.	No full consultations with the key project stakeholders due to a very tight timeline for sending back the revised document.
Regional and International Cooperation and Partnerships			Participated as a moderator of a panel discussion on Strengthening Sustainability and Energy Security in SIDS. This is part of the International Energy Conference held in Vienna on 22-24 June 2009.	Costs were paid for by the conference organisers.
Regional and International Cooperation and Partnerships			Participated in the Regional Energy Meeting / Pacific Energy Ministers Meeting in Tonga on 20-24 April 2009.	
Regional and International Cooperation and Partnerships			Completed the conduct of a Capacity Building Workshop on the Clean Development Mechanism on 25-29 April 2009.	A 4 year EU-funded programme through UNEP.

9. Challenges/Issues Encountered

There were no major issues faced during the quarter but a decline of the delivery rate from 82% to 14% is a cause of concern. With the number of approved project totaling USD 277,526 and two regional events planned for 3 QTR 09, the delivery rate is expected to recover back to above 75%. However, while the spending of the GEF funds slowed down during the quarter, there was not a corresponding decline in the delivery of co-financing activities that are directly related to the PIGGAREP. For instance:

- The implementation of the Kiribati solar water pumping project commenced during the quarter
- The draft of the Energy Action Plan for the Gilbert Group in Kiribati commenced during the quarter
- The construction of the renewable energy information centre in the Solomon Is
- The rehabilitation of solar home systems in two islands of Tonga was completed during the quarter
- The signing of the supply, installation and training contracts for the Tuvalu Photovoltaic Electricity Network Integration Project (TPVENIP)
- The completion of a regional capacity building workshop on CDM

It can be said that the work plan for the quarter contained activities which should have been removed but can't as the work plan has already been approved. For instance, the USD 40,000 for a training needs assessment at Nauru is now taken over and funded by PPA. Similarly, a USD 20,000 in Tonga's as support to the REM/PEMM did not qualify for support and should have been removed.

The table below presents the key activities in the work plan and how they contribute to the low delivery for the quarter.

Country	Amount in the 2 QTR work plan (USD)	% in quarter's total budget	Comments
Fiji	35,000	10	Activities have been approved for funding. Implementation delayed due to staff turnover
Kiribati	28,000	8	PAS not developed / finalized
Nauru	40,000	11	Earmarked for a training needs assessment but this activity is being conducted and funded by PPA.
Niue	50,000	14	For a system modeling study. Activity approved for funding but awaiting ToR.
PNG			No activity planned for the quarter
Samoa	10,000	3	For an awareness day. PAS has just been received for the activity to be conducted 3 QTR 09.
Solomon Is	39,000	11	Activities approved for funding. RFPs issued and contracts will be awarded 3

Country	Amount in the 2 QTR work plan (USD)	% in quarter's total budget	Comments
Tonga	20,000	6	QTR 09 for amounts much larger than the budgeted amount. To support REM / PEMM but activity did not qualify for support
Tuvalu	10,000	3	To support wind power study. PAS has been submitted for activity to be on 3 QTR 09.
Vanuatu	10,000	3	For study tours but PAS not yet developed
PMO	10,000	3	For travels, audit and reviews. Most of the PM travels were funded outside PIGGAREP
TOTAL	252,000	70	

The table below shows outstanding activities that the PSC has endorsed and that SPREP has written to countries to confirm the financial support.

Country	Date of SPREP Letter	Project Confirmed for funding	Budget (USD)	Status as at end of June
Cook Is	10 June	Cook Is Wind Energy Project	70,000	RFP to be issued and supplies to be purchased 3 QTR 09.
Fiji	25 March 09	Hydro Resources Assessment at Nacomoto Village, Kadavu and Sese Village, Cakaudrove	20,000	No development due to staff turnover.
		Review of the sustainability of the Fiji Renewable Energy Service Company (RESCO) model	75,000	No development due to staff turnover.
		Energy Information System project	75,000	No development due to staff turnover.
Kiribati	10 June 09	Kiribati's Renewable Energy Water Pumping Project for the rural schools in Kiribati	22,526	Preparatory site visits currently underway.
Niue	10 June	Assessment of the national grid to identify actions to reduce losses in order to maximize benefits from renewable energy	50,000	ToR yet to be drafted.
		Assessing the stability of the overall power infrastructure system arising from increased production of RE/PV	50,000	ToR yet to be drafted.

Country	Date of SPREP Letter	Project Confirmed for funding	Budget (USD)	Status as at end of June
Solomon Is	25 March	Grid Connected system Undertake Tariff study to take into account power input from RE sources	40,000	ToR yet to be drafted.
		RE awareness and dissemination of information / programmes for all sectors	20,000	Activities not yet finalized
		Training for schools receiving solar photovoltaic systems from the Italian government	20,000	Evaluation of proposals underway. Contracts to be awarded 3 QTR 09
		Development of Biofuel in the Solomon Is	39,000	Evaluation of proposals underway. Contracts to be awarded 3 QTR 09
		Institutional and Capacity Building Assistance for the Rural Electrification Unit of the Energy Division	36,000	Evaluation of proposals underway. Contracts to be awarded 3 QTR 09
TOTAL			277,526	

As mentioned in the 1 QTR 09 Progress Report, Table 1 has indicators with corresponding blank achievements. Some of these can only be achieved through regional interventions. Examples include activities relating to indicators such as:

- *2 completed training courses/workshops on the manufacturing and repair of RET system components by 2012*
- *1 training course for the banking/financial institutions in the PICs designed and conducted each year starting 2010*
- *2 completed training courses/workshops on energy planning and energy project coordination and management (EP&EPC/M) by 2012*
- *2 completed workshops on energy data gathering system and operation and maintenance of the energy database*

10. Solutions Applied (to address issues and challenges)

The PIGGAREP PMO has received more PAS and will be circulated for PSC endorsement. Writing terms of references for some of the activities appears to be the reason for the delay in the implementation of some activities. Here it is important to encourage PICs to get hands-on experiences in actually drafting the ToRs rather than the PMO doing it and underutilize the capacity and expertise that are available at the national level.

The participation of local staff in the implementation of project activities, as was done during the quarter in the Vanuatu hydropower feasibility study, should continue to be encouraged.

For the empty indicators, these regional activities must be built into the work plan for 2010 as regional activities.

11. Recommendations for Future Action/Work Plan Quarter 2/2009

Please see the 2 QTR 09 column of the 2009 Work Plan, attached as Annex 1.

12. Project Finance

The report for the audit conducted on the project was completed during the quarter. The audit concluded with the following opinions:

- That the Statement of Combined Delivery Report (CDR) presents fairly in all material respects the expenditure of USD 533,121.00 incurred by the project for the period 1st January 2008 to 31st December 2008 in accordance with UNDP accounting requirements.
- For the Statement of Assets and Equipment, there were no assets and equipment acquired by the project during the period under review 1st January to 31st December 2008
- Statement of Cash Position presents fairly in all material respects the cash position of the project amounting to USD 87,560 .00 as at 31st December 2008 in accordance with UNDP accounting requirements.

The total budget for the quarter was USD 362,500. Total expenditures were only USD 64,335 (or 18% of the budget) with USD 36,236 (56%) being PMO-related costs and USD 28,099 (44%) being for PICs project activities and participation in regional activities. The low delivery is mostly due to the following factors:

- Many regional meetings that too place during the quarter and for which many of the national coordinators participated. These included the REM / PEMM (20-24 April), the regional CDM Capacity Building Workshop (25-29 May), the ADB Clean Energy Week (15-19 June) and the Vienna International Energy Conference (22-24 June).
- Local capacity was stretched on implementing co-financing activities during the quarter. This was most obvious in Tonga where they were installing their IUCN/Italian solar PV rehabilitation project. In the Solomon Is, the implementation of their solar PV for schools is currently underway. Kiribati started implementing its Italian-funded solar water pumping project and officers in Vanuatu were tied up with the fieldwork on the Talise feasibility study.

- Postponement of the Joint EU REP- 5 / SPREP PIGGAREP workshop on the installation and maintenance of Grid connected PV systems.
This workshop was originally scheduled for 4 – 8 May but was postponed due to the postponement of the arrival of the ship with the solar PV equipments for the workshop practical. The workshop has now been rescheduled for the 3 QTR 2009.
- Staff turnover in Fiji
The Director of Energy in Fiji and national coordinator for the PIGGAREP (Ms Makereta Sauturaga) was transferred to the Ministry of Youth and Sports during the quarter. This has delayed the implementation of USD 170,000 worth of activities that has already been approved for Fiji.

An analysis of the project finance to the end of the quarter can be seen in the following graphs.

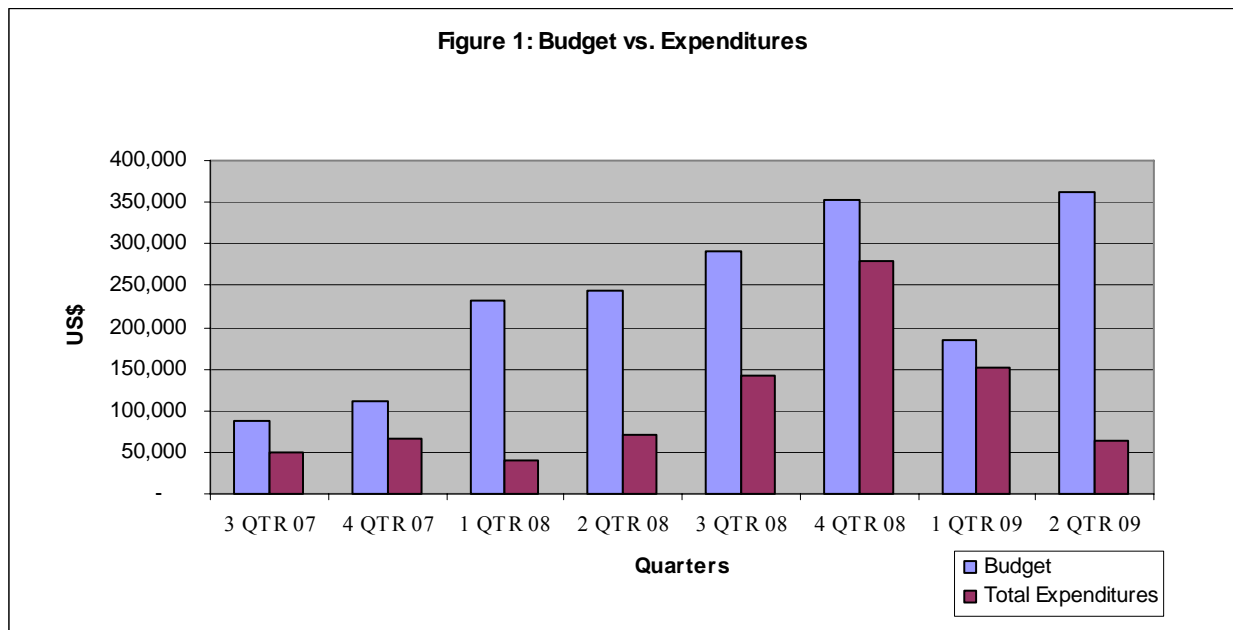


Figure 2: Delivery Rate (expenditures / budgets)

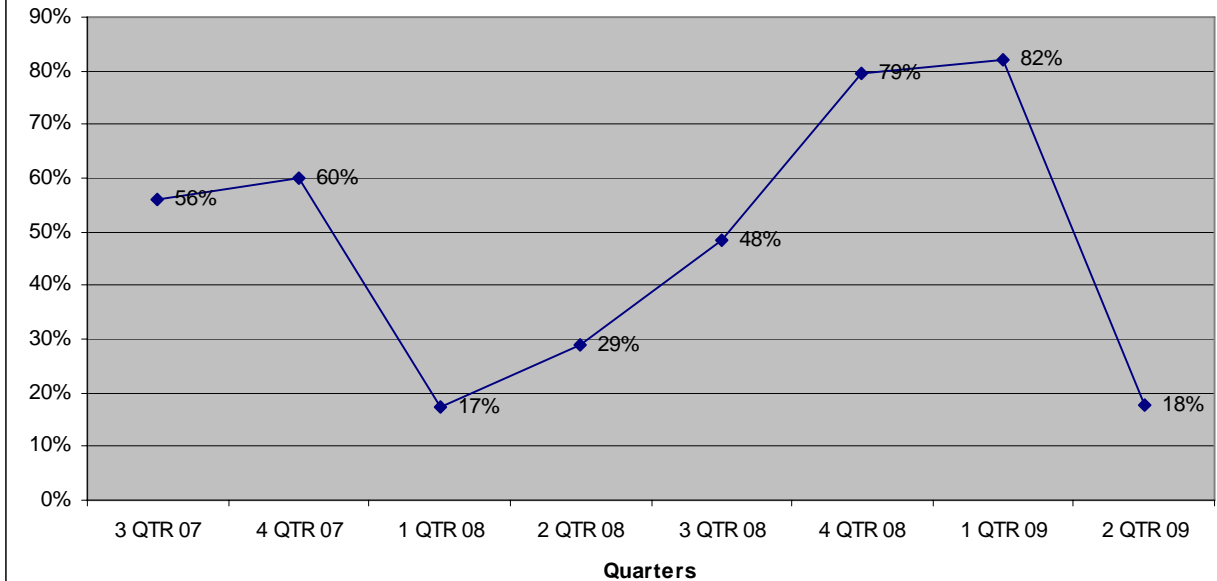


Figure 3: PICs vs. PMO Expenditures

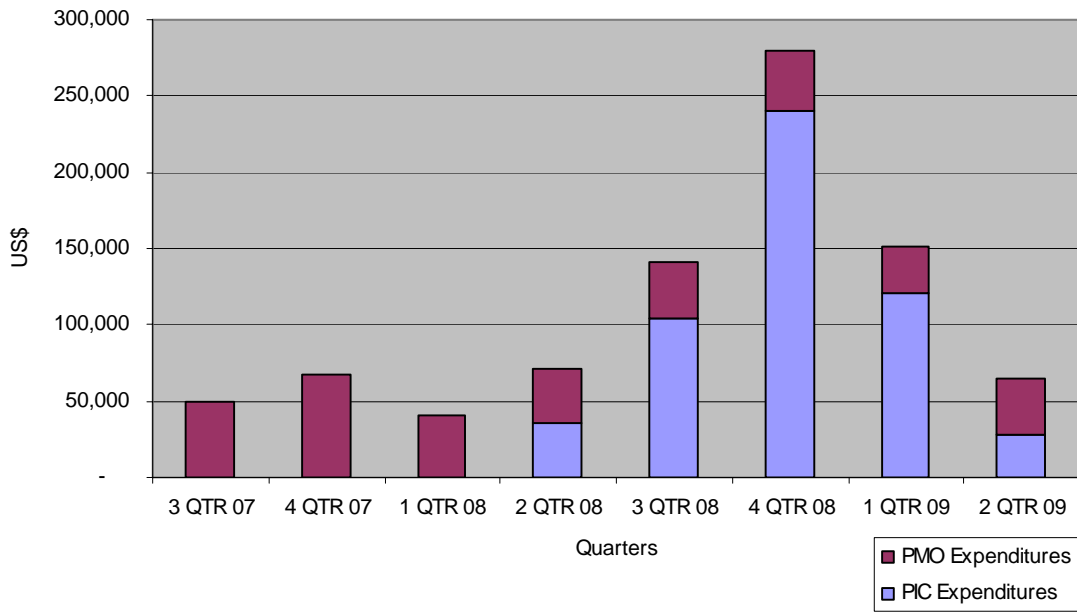
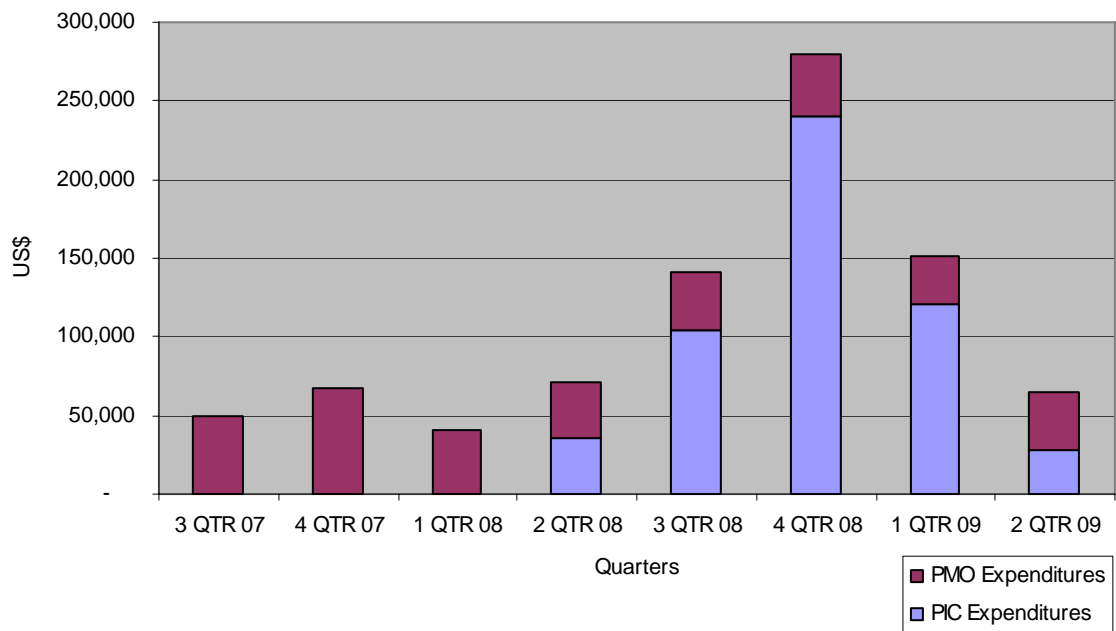
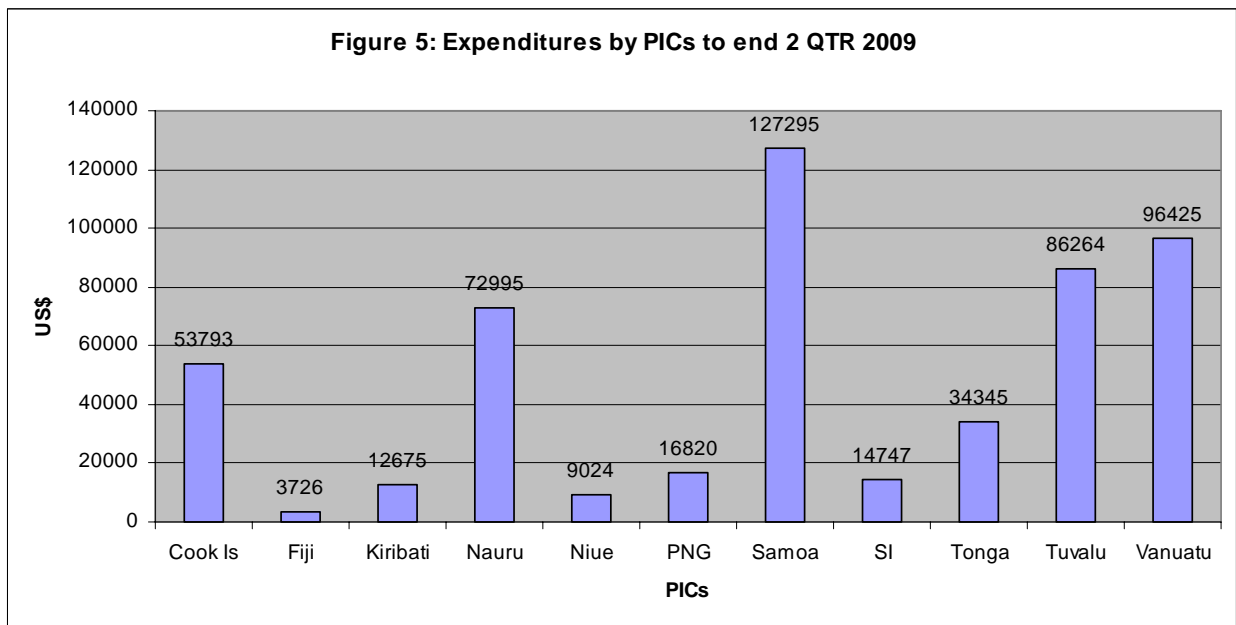
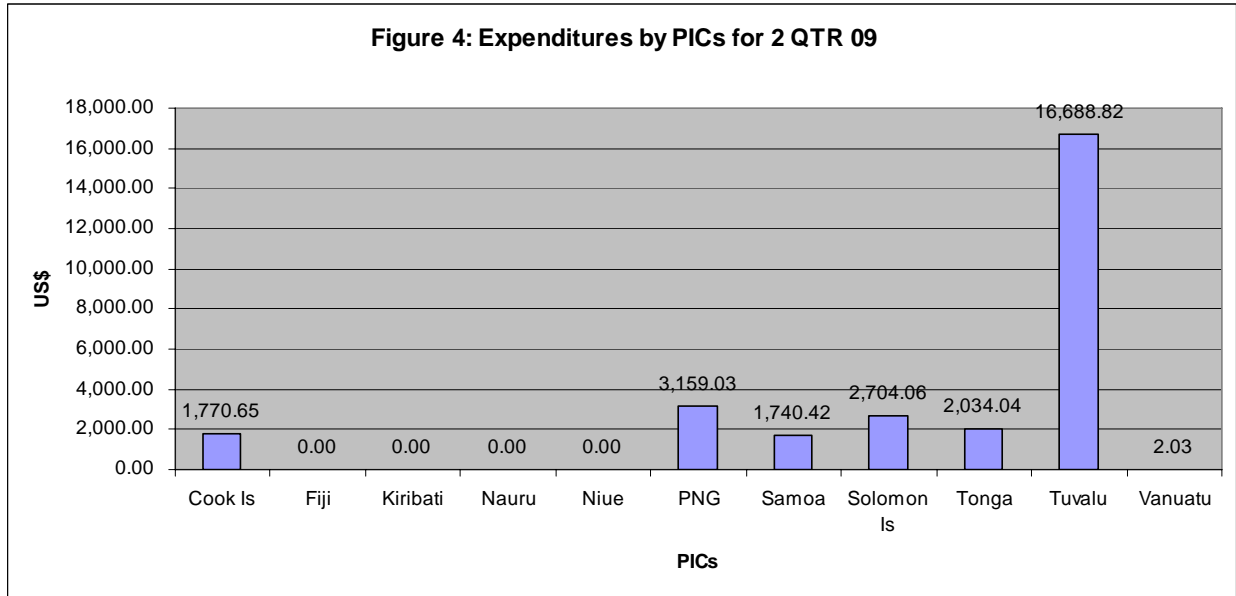


Figure 3: PICs vs. PMO Expenditures





The financial report for the quarter is attached as Annex 2.

13. Report Prepared By: Solomone Fifita
 Project Manager
 14th July 2009

Annex 1: 2009 Work Plan and Budget

Proj. Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				2009 Total	Comments
				1	2	3	4		
1	Mangaia Power System Upgrade	Technical	French and Aust govts, SOPAC and MIC			10,000		10,000	
2	Wind Power Feasibility Study	Technical	Energy / TAU				50,000	50,000	
3	RE / Green Award Programme for the tourism sector	Awareness	Energy / Tourism				5,000	5,000	
Sub-total Cook Is				0	0	10,000	55,000	65,000	
1	Technical, economic & environmental evaluation of solar home systems project	Technical	DoE	5,000	5,000	5,000	5,000	20,000	
2	Establishment of the Biogas market	Market	DoE			10,000		10,000	
3	Technical Assistance (through consultancy) for strengthening the management of the Energy Information System	Technical	DoE	5,000	10,000	5,000		20,000	
4	Technical Support to the development of energy legislation	Policy	DoE		5,000	8,000	5,000	18,000	
5	Technical visits to RESCO business operations in Kiribati (Kiribati Solar Energy Company).	Institutional	DoE		15,000	10,000		25,000	Moved from 1 QTR to begin 2 QTR 09.
Sub-total Fiji				10,000	35,000	38,000	10,000	93,000	
1	National Training for Trainers in PV maintenance & Trouble Shooting	Technical	SEC				45,000	45,000	
2	Review of KSEC, Restructure, On the Job Business Training, Strategic Planning, Project Preparation, Management, Monitoring and Evaluation	Technical	SEC		15,000			15,000	Business training will be carried out by the TA and will be conducted at KSEC HQs to Senior Management staff for one week plus one week preparation
3	Migrating RESCO Manager to an open source platform.	Technical	SEC		10,000	20,000	30,000	60,000	Programming and Launching of the RESCO Manager V3 (Web - based). Changed to begin 2 QTR 09.

Proj. Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				2009 Total	Comments
				1	2	3	4		
4	Consultations on the National Energy Policy and drafting of an Action Plan	Policy	EPU, MELAD, MISA	7,000				7,000	Workshops, awareness, stakeholders
5	Public awareness campaigns	Awareness	SEC	3000	3000	3000	3000	12,000	Awareness raising activities linking RE projects to mitigating potential to climate change, and their benefits to environment and economy
Sub-total Kiribati				10,000	28,000	23,000	78,000	139,000	
1	PV training	Capacity building	NUA			5,000		5,000	EU-REP5
2	Energy Database	Institutional	NUA/CIE	10,000				10,000	SOPAC
3	Training needs assessment for RE				40,000			40,000	
Sub-total Nauru				10,000	40,000	5,000	0	55,000	
1	RE training in all sectors	Awareness	NPC	-	5,000	-	5,000	10,000	NPC Electricians/Private Sector
2	Network and System Modelling for the Grid Stability	Technical	Consultant		50,000	-	-	50,000	Impact on any size RE connected to the Grid
3	RE and Existing Tariff Study	Technical	Consultant				40,000	40,000	Impact of the 52 kW PV Grid Connected system
4	Awareness programs on all sectors radio/tv/local news paper/1/4ly weekly bulletins	Awareness	NPC/Private Sector	-	5,000	5,000	5,000	15,000	Workshops/Monthly Programs
Sub-total Niue				0	60,000	5,000	50,000	115,000	
1	PNG: PNG: Feasibility Study for the rehabilitation of Sohun hydro, Telefomin hydro and Yagusa Hydro (PNGSEL/PIGGAREP)					50,000		50,000	
2	PNG: Biofuel research/study into coconut oil as a substitute fuel for diesel engines (ATCDI/Unitech & PIGGAREP)						15,000	15,000	
Sub-total PNG				0	0	50,000	15,000	65,000	
1	Hydro data collection programme	Technical	EPC (lead) Energy Division, energy stakeholders, EPC, MNREM, SWA,					0	The 73,605 is deleted as this has been committed and reported in 4 QTR 08.

Proj. Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				2009 Total	Comments
				1	2	3	4		
2	Wind resources assessments	0	EPC (lead), Energy Division, Energy Stakeholders, SWA, MNREM,					0	The 12,000 is deleted as this has been committed and reported in 4 QTR 08.
3	National energy awareness campaign day	Info & Awareness	Energy Division (lead), energy stakeholders, MNREM, MWCSO, MAF, MWTI, MESC, RDIS, NUS, EPC, SSC, SAA, STA, Oil companies, gas companies, SUNGO, SAME, COC, MEDIA		10,000			10,000	
Sub-total Samoa				0	10,000	0	0	10,000	
1	RE Training for students at Willies and SICHE on Electrical Trade	Technical	SIG, SICHE, SITAFE	2,000	2,000	2,000	2,000	8,000	
2	Re-do a feasibility studies for HURO and RUALAE Hydropower schemes	Technical	SIG, SIEA		7,000	7,000	7,000	21,000	
3	Bio-fuel Development and Expansion in the Solomon Islands	Market	SIG, Private Sector, SIEA		7,500	7,500	5,000	20,000	
4	Workshop/Training for users (schools) of the installed Solar PV systems	Technical	SIG, Private Sector	3,000	3,000	3,000	3,000	12,000	
5	Setup of RE Information and Exchange Centre	Institutional	SIG, Private		20,000			20,000	
Sub-total Solomon Is				5,000	39,500	19,500	17,000	81,000	
1	Review and Evaluation of the Nuafo'ou SEIS	Institutional	EPU		10,000			10,000	
2	Technical evaluation of the solar installations in Mango & Mo'unga'one	Technical	EPU, HSES	3,000				3,000	The whole installation must be evaluated and set platform for commissioning
3	Review and confirm the EDF 10's feasibility study					15,000			
4	Awareness Training for solar water pumping and TONGATAPU Solar Street light villages (Nakolo(NZ community FUND - install in DEC 2008), villages of the Tatakamotonga Districts	Awareness	EPU		11,000			11,000	The installation of solar street lights in Nakolo in December 2008 funded by NZ Nakolo Committee is the Baseline Activity. Changed to begin 2 QTR 09.

Proj. Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				2009 Total	Comments
				1	2	3	4		
5	REM/FEMM 2009				20,000			20,000	Support the hosting of the REM/FEMM 2009 in Tonga
Sub-total Tonga				3,000	41,000	15,000	-	59,000	
1	Support to TEC's outer island grid-connected renewable energy project	Technical	TEC			20,000		20,000	
2	Studies of wind potential in the outer-islands	Awareness			10,000			10,000	
3	Support implementation of Policy and Strategic Action plan	Policy Institutional	Energy			6,250	6,250	12,500	
4	Analysis of wind data and Preparation of Wind Fuel savings project for Funafuti Islands	Institutional	TEC			50,000		50,000	
5	Public demonstration of Biodiesel, todi ethanol, gasification production Dissemination of biogas technology introduced by PIEPSAP Education tool for children in tuvaluan, USP & high school classes	Awareness	Alofa Tuvalu, Tuvalu Maritime Training Institute, PM Office, Environment, energy, home affairs, media, TCS, TCTC, TEC, USP			5,000	5,000	10,000	
Sub-total Tuvalu				0	10,000	81,250	11,250	102,500	
1	Technical training on the O&M of the Sarakata hydropower project	Institutional	EU & Unelco	3,000				3,000	
2	Review of the 2002 Talise Mini Hydro Feasibility Study	Market	Energy Unit, Consultant	50,000				50,000	
3	Feasibility Study of the Lowanau River (Tanna) hydro resource potential	Technical	EU, TA			10,000	10,000	20,000	Utilising a local consultant to carry out the feasibility study
4	Community Training on Biofuel at NE Malekula, Saratamata and Vanualava	Awareness	UNELCO, Energy Unit, Provincial govts			5,000	5,000	10,000	Site Management training
5	Technical visits/study tour to community based pico/micro hydros in Solomons, Fiji and/or PNG	Institutional	EU		10,000	15,000		25,000	Can it be to just one PICs?
Sub-total Vanuatu				53,000	10,000	30,000	15,000	108,000	
Sub-total National Activities				91,000	273,500	276,75	251,250	892,500	

Proj. Code	Activity	Outcome	Lead / Collaborating Agencies	Year 1 Quarters				2009 Total	Comments
				1	2	3	4		
						0			
	Regional Activities:								
2	Regional Workshop on writing project proposals and PAS on 3rd week of January 2009			40,000				40,000	
1	REP-5 / PIGGAREP Workshop on grid-connected PV				35,000			35,000	Changed to begin 2 QTR 09
3	Technical visits to RE developments in Vanuatu					40,000		40,000	Changed to begin 3 QTR 09
4	Study tour of the Ha'apai Solar Electricity Inc - Fiji, Kiribati, PNG, Vanuatu, Tuvalu, SI, Samoa.						40,000	40,000	Changed to begin 4 QTR 09
	Sub-total Regional Activities			40,000	35,000	40,000	40,000	155,000	
	PMO Costs								
	International Consultants (PM)			30000	30000	30000	30000	120,000	
	Local Consultant - PA			4000	4000	4000	4000	16,000	
	Local Consultant - APA			1000	1000	1000	1000	4,000	
	Administration Fess			5000	5000	5000	5000	20,000	
	Contractual Services - Ind			1000	1000	1000	1000	4,000	
	Travel, Audits and Reviews			10000	10000	10000	60000	90,000	
	Contractual Services - Co			1000	1000	1000	1000	4,000	
	Equip and Furniture			0	0	0	0	-	
	Comm & Audio Equip			0	0	0	0	-	
	Supplies			500	500	500	500	2,000	
	Info Tech Equip			1000	1000	1000	1000	4,000	
	Audio Visual and Print Prod			500	500	500	500	2,000	
	Total for PMO			54,000	54,000	54,000	104,000	266,000	
	GRAND TOTAL FOR 2009			185,000	362,500	370,750	395,250	1,313,500	

Annex 2: Financial Report for the second quarter of 2009