Bula everyone!

This quarter and this issue of the Pacific Energiser holds some historical significance which is worth capturing. Pacific Energiser has now reached its first anniversary and that in itself is a major achievement. It is pleasing to note that libraries as far as the Netherlands are subscribing to the newsletter.

Pacific Energiser is a joint production of many agencies and the Pacific Island countries and territories (PICTs) and is a regional tool to support the whole-of-sector approach and the ‘many-partners-one-team’ spirit of the Framework for Action on Energy Security in the Pacific. It is therefore pleasing to note the growing levels of cooperation among agencies working in the energy sector of PICTs.

Towards the end of 2010, the Secretariat of the Pacific Regional Environment Programme (SPREP) funded PICT participants to attend a renewable energy and climate change conference of the University of the South Pacific (USP). Following that, the Secretariat of the Pacific Community (SPC) and SPREP conducted a joint regional energy planning workshop.

On July 4–8 this year, cooperation among agencies got to a new level with SPREP’s PIGGAREP (Pacific Islands Greenhouse Gas Abatement through Renewable Energy Project) and the Pacific Islands Forum Secretariat’s (PIFS) Pacific Environment Community Fund jointly funding a regional project proposal writing workshop in the Cook Islands and engaging SPC and the United Nations Development Programme Pacific Centre as the key resource people for conducting the workshop. This cooperative effort not only enabled countries that are not members of the PIGGAREP to participate, it also enabled expertise that are not presently available at both SPREP and PIFS to be provided from other partner agencies in a most cost-effective manner.

In late July, SPC Energy Programme staff assisted the Pacific Power Association’s (PPA) Annual Conference and led the presentation and discussions on petroleum issues in the power utilities and the assistance SPC can provide to members of PPA. Technical assistance was provided to the Palau Public Utilities Corporation straight after the PPA conference. The annual conference also provided an opportunity for SPC’s North-REP project staff to meet their power utility counterparts.

In September, USP and SPC’s North-REP joined hands in the Marshall Islands on a renewable energy capacity building workshop for the North Pacific.

In October, SEIAPI (Sustainable Energy Industry Association of the Pacific Islands) and USP will be spearheading the formation of a technical curriculum/competency standards committee to look at setting a competency standard that would then be used by training institutes in the development of their training courses on renewable energy and energy efficiency.

SPREP and International Union for Conservation of Nature are coming together again in November to have their back-to-back annual programming and review meetings. There is a possibility that the first meeting of the project steering committee for USP’s KOICA (Korea International Cooperation Agency) project will be held at the margins of this event.

The increasing joint collaborations among agencies are gratefully acknowledged and we must make sure that joint activities are not carried out for convenience only. The challenge is to ensure that they actually result in reduced greenhouse gas emissions from air travels, reduced absence of officials from their home bases and reduced use of donor funds for regional meetings and workshops.

The region has recently been offered a funding opportunity under the SIDS Dock. The SIDS Dock is an institutional mechanism established to facilitate the development of a sustainable energy economy within the small island developing states. The ultimate goal of SIDS Dock is to increase energy efficiency by 25% (2005 baseline) and to generate a minimum of 50% of electric power from renewable sources and a 20-30% decrease in conventional transportation fuel use by 2033.

In December 2010 in Cancun, Mexico, SIDS Dock was launched with a grant of US$14.5 million from the Government of Denmark. In early August, regional agencies of PICs who have signed on to the SIDS Dock were requested to submit proposals to be funded under this grant. I am heartened by the manner in which regional agencies and the countries have collectively set the priorities projects for this opportunity. In fact, it was not based on a first-come-gets-all and it was not a one-sided choice of renewables over energy efficiency nor a one only regional implementation partner.

By all accounts, we are surely heading in the right direction with the right cooperative spirit.

‘Ofa ata

Solomone Fifita
This year marks the 30th anniversary of the Regional Energy Programme, established by the Pacific Islands Forum in response to the huge increase in the cost of crude oil in the 1970s. Soon after its establishment, many donor-funded renewable energy technologies were proposed, in the hope that renewable energy would be a feasible substitute for fossil fuels and would cure all the ills of reliance on them.

To some extent this has succeeded. Fiji invested in its Monasavu Hydropower Scheme in 1978 and has continued to invest in hydro and wind power to keep up with the growing demand for electricity. By 2010, 51.4% of the Fiji Electricity Authority’s (FEA) electricity generation came from renewable energy sources. Similarly, in 1993, Samoa’s Afulilo Hydropower Scheme was in full commercial production and by 2005, 47% of the Electric Power Corporation’s power generation was from renewable energy sources. This diversification of energy sources for power generation has not only made power generation more secure, it has saved these two power utilities millions of dollars that would otherwise have been spent on imported fossil fuel. Moreover, the burning of less fossil fuel has translated into reduced greenhouse gas emissions from power generation.

In order to retain the economic and environmental benefits of reduced fossil fuel reliance, the use of renewable energy sources must keep up with the increase in the demand for electricity. It is for this reason that some Pacific Island countries and territories (PICTs) and power utilities have adopted time-bound renewable energy targets. Cooks Islands is aiming at generating 50% of its electricity from renewable energy sources by 2015. The mission of FEA includes providing 90% of the energy requirements through renewable energy sources by 2015. The Green Energy Micronesia aims at 20% of electricity generation through renewable energy sources by 2020.

But the battle for a greener power sector will not be won through more renewable energy sources only. If unchecked, the growing inefficiencies in generation, transmission and distribution, as well as in consumption, will erode the benefits of additional renewable energy capacity. A 2010 study to quantify power utility losses in some of the power utilities in the northern Pacific revealed that total losses can be as high as 33.3%.

Are we missing the target?

While the region’s efforts to manage its fossil fuel thirst have largely concentrated on the power sector, it is the transport sector that accounts for the larger share of fossil fuel imports in most PICTs. In the absence of a parallel active and well-funded fuel substitution and efficiency programme for the transport sector, fossil fuel substitution benefits in the power sector will not be very visible at the macro level.

The new energy direction

The Forum leaders set a new course for the Regional Energy Programme at their 41st meeting at Vanuatu, when they endorsed the Framework for Action on Energy Security, with its 2010–2020 vision of an energy secure Pacific.

Embedded in this vision are the concepts of ‘many partners, one team’ and the whole-of-sector approach, supporting the four pillars of energy security: access to energy, affordability of energy, efficiency and productivity of energy use, and environmental quality of the energy sector.

Access to energy

Electricity denied is development denied. About seven million people out of the region’s ten million people have no access to electricity. In countries where fewer than 30% of the population is estimated to have access to electricity – Papua New Guinea, Solomon Islands and Vanuatu – the priority is making electricity accessible to more people, from renewable or non-renewable energy sources. On the other hand, in countries where the whole population has access to electricity generated with fossil fuel – Cook Islands, Nauru and Niue – the priority is fuel diversification: cleaner (and possibly cheaper) fossil fuel as well as feasible renewable energy technologies.
**Affordability of energy**

The burden of importing fossil fuel has an impact on a country’s macro economy. When crude oil skyrocketed to almost USD 150 per barrel in mid 2008, inflation jumped to an all-time high of 18.6% and 17.5% in Kiribati and Marshall Islands respectively. The cost of imports in Fiji increased by 25% during the same period. At the micro level, the increasing amount a family has to spend on electricity and other fuel means there is less money for food, education and health.

The economic burden of the price of fossil fuel cannot, however, be reduced by fuel substitution and energy efficiency only. It is also necessary to review petroleum pricing practices and policies, review fuel supply-chain arrangements and contracts, and upgrade distribution and storage infrastructure. Some PICTs have made a good start, saving millions of dollars by moving to a pricing template that is fair and transparent.

**Efficiency and productivity of energy use**

Energy is a factor of production and therefore the amount of energy used in production should correspond to the output. Where they do not correspond, it is probably due to inefficiency in the system.

Both renewable energy systems and fossil fuel systems can be made more efficient. For fossil fuel based systems, efficiency efforts should concentrate on where these systems are mostly used – for transport and power generation. Efforts to improve efficiency in most countries are heavily weighted towards the power sector, despite the fact that transport uses more fuel. Fiji has put in place incentives for people to buy new, small and efficient cars in its energy efficiency effort.

**Environmental quality of the energy sector**

The greenhouse gas inventories made in preparation for the Second National Communications to the Conference of the Parties to the United Nations Framework Convention on Climate Change confirmed that the combustion of fossil fuel in transport and power generation are the main sources of greenhouse gases emissions in PICTs.

**Forum leaders’ wisdom**

At the recently concluded 42nd Pacific Islands Forum in New Zealand, Pacific leaders reaffirmed their commitment to renewable energy and the promotion of energy efficiency. They also acknowledged the need to make significant progress in the diversification of sources of energy by developing domestic renewable energy in order to reduce their reliance on imported fuels.

Leaders also agreed on the value of energy audits and of developing credible whole-of-sector plans such as energy road maps and structures to improve energy security, reduce dependency on fossil fuel for electricity generation and improve access to electricity. The leaders expressed support for the development of effective management of fuel supply risks and meeting energy efficiency targets, including expanding the existing electrical appliance energy efficiency standards and labelling programme to help realise significant energy savings. They acknowledged the benefit of facilitating greater private sector participation in the Pacific energy sector by systematically reducing barriers to the uptake of distributed generation.

Leaders called on development partners to assist in the implementation of these activities and in the implementation of national energy sector plans and targets, as well as to strengthen coordination of their financing activities.
Gender analysis is one of the tools that could be applied in mainstreaming gender in both energy project planning and implementation. It helps to identify the different needs and interest of men, women and children in a community during project inception and implementation. SPC EDD's Energy Programme currently implements a project “Gender in adaptation and low carbon development” in collaboration with Gender_cc International and promotes gender analysis as a tool to integrate gender in adaptation to climate change and energy project planning.

The project will be implemented in collaboration with the department of women affairs in small island states (SIS) in the Pacific. The department of women affairs need to play a critical role in this work as gender mainstreaming has to be integrated initially at the national level policy formulation before it trickles down to the projects. However, as project planners and implementers, it is also vital that we are gender sensitised and able to consider the needs and interests of all individuals in the community men, women, youth, disabled and children.

In June and August 2011, gender mainstreaming training was delivered in Kiribati and Tuvalu respectively. During country visits, energy baseline indicators and information on national energy policy implementation were also collated with the assistance of the energy departments in these countries.

**Kiribati**

Training and awareness were carried out for the Women Catholic Organisation, Tei Toi Ningaina, on 21 June during the Annual General Assembly of the organisation where over 100 women from all the islands in Kiribati gathered for a week-long deliberation. The focus was on women and knowledge development, training needs and gender in climate change and energy. The awareness session was carried out in collaboration with the University of the South Pacific in-country project, the USP PACE-SD Climate Change project (Pacific Centre for Environment and Sustainable Development). The objective of the USP PACE-SD project is to develop community based climate change adaptation projects. It is anticipated that the Kiribati adaptation project will work closely with the USP PACE-SD to integrate gender dimensions during project inception, formulation and implementation. Two adaptation projects are being considered by the USP PACE-SD project, which are expected to be finalised towards the end of this year.

USP’s Kiribati Director delivered a presentation on women and development knowledge, while the Kiribati Continuing and Community Education Coordinator highlighted the different training courses available for women either as students or as instructors for the traditional art of weaving, dancing etc. Ms Koin Etuati of SPC presented on gender in climate change and energy.

The gender, climate change and energy presentation illustrated how women are perceived in a society according to their gender roles. These gender roles are related to everyday work at home, at the community and at institutions such as Tei Toi Ningaina. The gender roles of women differ to men and children and therefore the impacts on their roles and ability to adapt to the changes or interventions also differs.

Gender entry points at the local and community level were discussed. It was highlighted that due to cultural factors, women were usually not engaged in decision-making that took place at the community halls or maneaba as their socially constructed role was to prepare food and implement decisions. However, their ideas and views can be captured during household surveys where they are able to speak at their own homes or in some instances through their husbands if it involved a decision regarding village commitments. Another entry point was the representation of women community-based organisations at the decision making level (national councils) and therefore there is a need to establish and strengthen these organisations.
A one day training was also organised by the Department of Women Affairs for the heads of the departments of the Ministry of Internal Affairs as well as Energy. One of the activities undertaken during the training was a review of the KIREP (Kiribati Italian Renewable Energy Programme) on solar water pumping for secondary schools with a focus on gender. Participants looked at how gender considerations can be integrated into the two main activities under the KIREP project — capacity development and institutional strengthening. It was recommended that there is a need to include a wider stakeholder group for training on solar water pumps and not be limited to the school principal and school technician. Full reports on the above training will be disseminated to partners and participants in October 2011.

**Tuvalu**

The gender training in Tuvalu was convened from 8–9 August organised through the Department of Energy in collaboration with the Department of Women. The main target groups were the departments of environment, energy and non-governmental organisations. The training was timely as the Department of Environment carried out a nation-wide consultation on the formulation of its climate change policy the same week where the team from interested networks visited the Island Fale-Kaufule in the evenings from 7–11pm to present on the 12 main thematic areas already identified in the policy. The facilitators from the department of environment were able to change the way they carry out their evening consultations by being more attentive to women’s focus group discussions and thus were able to obtain interesting and useful comments compared to their previous consultations, which only involved men’s focus group discussions.

Presentations delivered during the training covered the different gender concepts and definitions; some of these concepts are normally included in policies and project documents but rarely understood. There was also a presentation on why gender was important in planning and implementation of energy related policies and projects. The gender dimensions to climate change were presented by Ms Alisi Molotii from the Department of Women. There was some misunderstanding on the concept of gender during the initial introductions. However, during the second day there was acknowledgement that gender roles were culturally constructed — it was about men, women and children — and that an awareness programme alone cannot consider the productive and strategic needs or interests of men, women and children, but that men and women should be made aware that they have to contribute to decision-making or planning.

The Director of Environment, Mr Mataio Tekinene provided an overview of the adaptation projects currently implemented in Tuvalu. A Powerpoint presentation was also delivered by Mafalu Lotolua General Manager of the Tuvalu Electricity Cooperation on solar photo voltaic grid connected project in Motufua Secondary School as well as the vision for the government’s target of 100% renewable energy for electricity generation by 2020.

Discussions on the lack of women’s participation in decision-making as well as in politics highlighted that women need to be empowered on all development issues. It was acknowledged that cultural barriers still exist which do not encourage women to speak during island community meetings. However, facilitators of these community meetings, who are mostly men, need to be gender sensitised and to make space or allow other groups such as women and youth to share their opinions. This was practiced in various meetings by a few leaders who understand the cultural barriers and therefore this practice was encouraged by the Department of Women and the Tuvalu Council of Women.

A stakeholders’ SWOT and BRET analysis were used to formulate the strategic action plans required in promoting gender equality and equity in the adaptation projects and in promoting the target of 100% renewable energy in the electricity sector. The proposed action plan has been disseminated to the department of environment for inclusion in the climate change implementation plan. A full training report will be distributed to participants and project partners in October.
Ambassador Wiepke van der Goot, the Head of Delegation of the European Union (EU) for the Pacific, visited Palau from 4–5 August 2011. As part of his trip, he met with Mr Greg Decherong, Director of the Palau Energy Office, to discuss progress on the EU-funded North Pacific ACP Renewable Energy and Energy Efficiency Project (North-REP).

North-REP is an approximately 20 million dollar project aimed at reducing dependency on fossil fuel and increasing access to electricity in Palau, Republic of Marshall Islands (RMI) and Federated States of Micronesia (FSM). The activities to be undertaken as part of North-REP in Palau include an energy conservation and efficiency awareness and education campaign, the implementation of energy efficiency measures at some government buildings, working with the National Development Bank of Palau on energy efficient loans for existing houses, and installation of a 115kWp grid connected solar photo voltaic (PV) system for the track and field stadium.

Mr Decherong thanked Ambassador van der Goot for the EU’s contribution to Palau in the energy sector and the support of the Secretariat of the Pacific Community in assisting the Palau Energy Office in implementing North-REP. Mr Decherong said, “North-REP is a great example of FSM, RMI and Palau combining our efforts to reduce our region’s dependence on fossil fuels by saving energy and using renewable energy resources.”

The Ambassador’s trip to Palau finished with a visit to the track and field stadium to see where the solar PV system will be installed.

EU's Ambassador visits Palau

Investigating opportunities for renewable energy and energy efficiency use in industries in Palau

Mr Phil McCracken of IT Power and Mr Emanuele Taibi of the Secretariat of the Pacific Community (SPC) visited Palau in August as part of a United Nations Industrial Development Organisation (UNIDO) study, which is investigating opportunities for renewable energy and energy efficiency use in industries in Palau.

Mr McCracken and Mr Taibi were hosted by the Palau Energy Office that is also implementing the European Union funded North Pacific ACP Renewable Energy and Energy Efficiency Project (North-REP) in cooperation with SPC.

The UNIDO study involved visits to several hotels, dive shops, the PMA egg farm and other industrial facilities.

As part of the study, Mr McCracken and Mr Taibi visited Palau’s own Red Rooster Beer brewery. Mr McCracken said, “Although many renewable energy and energy efficiency options for the brewery had already been implemented by the Master Brewer, Mr Philip Kelm, it serves as a good example of the opportunities for businesses in Palau to reduce their overall energy consumption by being more energy efficient and using renewable energy where possible.”

Mr Kelm had installed a solar water heater for preheating feed water, switched to cold water for cleaning his vats, and will install variable frequency drives on his filters, with the eventual goal of removing the mechanical filters entirely and using perlite to remove sediment from the beer.

The UNIDO study is also being undertaken in Vanuatu, Tonga and Samoa and is supported by the Energy Programme of SPC’s Economic Development Division.
Almost three billion people worldwide rely on traditional biomass for cooking and heating. 1.4 billion have no access to electricity, and one billion only have access to unreliable electricity networks. In the Pacific, it is estimated that seven million people out of the region’s ten million still do not have access to electricity.

On 20 December 2010, the United Nations (UN) adopted a specific resolution (A/RES/65/151) to address this issue by declaring 2012 the ‘International Year of Sustainable Energy for All.’

Renewable energy is the best way to provide access to modern energy services to the 1.4 billion people that still lack these, while at the same time limiting greenhouse gas emissions. Although ambitious, such a proposition is becoming increasingly more accepted as the prices of fossil fuels, and concerns about the impacts of climate change increase. Energy supply must be affordable, reliable and environmentally friendly, for it to provide long lasting benefits to the people that gain access to it and improve their quality of life.

The European Union (EU), through projects like North-REP, is setting an example of how ambitious targets in terms of energy access can be achieved by using only renewable energy (RE) sources. The design of similar projects is consistent with EU’s energy and climate change policy, mainstreaming domestic policy objectives into global development assistance.

Several other donors and multilateral funds highlight the link between renewable energy, climate change and energy access in their design (for a recent overview, see Gualberti and Taibi, 2011). However, the level of funding made available so far falls short of what is needed to achieve universal energy access by 2030 (Bazilian et al., 2010; IEA, UNDP & UNIDO, 2010), a target recently set by the Advisory Group on energy and climate change (UN-AGECC Report, 2010).

If projects like North-REP can achieve in four years a 25% reduction in the number of people currently lacking access to modern energy services using only renewable energy and in extremely challenging logistic and environmental conditions, it would be an encouraging demonstration that universal energy access by 2030 is, indeed, an achievable target.

Several other countries in the Pacific are setting ambitious targets for renewable energy and energy access. The Director General of IRENA, Dr. Adnan Amin, during the meeting to review the Tonga Energy Roadmap in May 2011, referred to Tonga’s 50% RE target by 2012 saying: “ambition is the driving force to achieve goals.”

In terms of cost, North-REP’s funds for FSM – USD10 million over four years – constitute approximately 1% of the country’s GDP, each year for four years. This means that if North-REP succeeds, over four years only, in providing access to electricity to 25% of the population that are currently without it, dedicating 1% of GDP for 16 years to address energy access could be sufficient to achieving universal access to modern energy services in FSM by 2026, four years earlier than the 2030 deadline set by the AGECC report.

SPC’s Energy Specialist for FSM has visited three of the five islands in the State of Yap (approximately 2,000 people, 11 schools, four dispensaries) that the energy access component of North-REP in FSM is targeting and a survey of all five islands has already been undertaken.

In Chuuk the survey is ongoing and the first round of field visits took place at the end of August. Participants from Chuuk Public Utilities Corporation, Chuuk State Department of Education, Chuuk State Department of Health and Chuuk State Department of Planning are part of the team visiting the candidate project sites in Chuuk Lagoon islands. The candidate project sites include 27 schools and 17 dispensaries. The people impacted by North-REP in Chuuk will be in excess of 10,000, as most of the people without access to electricity in FSM live in Chuuk State. To succeed in such a challenging endeavor the involvement of all the stakeholders is the key to success, in line with SPC’s approach of ‘many partners, one team.’

In Pohnpei, many of the public facilities in the outer islands have been electrified under the previous EU funded project—REPs. There is only one island close to Pohnpei’s main island and two in Pohnpei lagoon that are still without access to basic electricity (a total of three schools and approximately 600 people). North-REP is working towards the establishment of the sustainability components to enable the completion of the electrification of Pohnpei State.

Kosrae State, not having outer islands, has almost all of its population already electrified, except for one village, Walung. North-REP will provide access to electricity in Walung and its school through off grid renewable energy systems.

In addition to the energy access component, North-REP National Project Steering Committee (NPSC) endorsed the following activities for North-REP during its meeting held from 11–13 May 2011:

- Rehabilitation of the hydro power plant in Pohnpei
- Solar PV grid connected systems in the main island of each state
- Capacity building activities on renewable energy and energy efficiency
- Awareness campaigns
- Energy audits
- Energy efficiency improvements
- Training on renewable energy and energy efficiency
- A national energy information system
- Further work on FSM’s energy policy

North-REP team will undertake the electrification of the identified outer islands in FSM during 2012 using 100% renewable energy sources.
The Government of Tuvalu requested for attachment of its two officials, Mr. Molipi Tausi (Energy Planner) and Ms. Freda Katepu with SPC’s Energy Programme. Mr Tausi and Ms Katepu spent a week each with SPC’s Petroleum Officer Mr. Shakil Kumar in mid-August 2011 in Fiji. The main objective of the attachment was to discuss ways to address high fuel prices, fuel standards, fuel storage and handling, petroleum pricing regulation/policy, data collection, management and analysis as well as the general improvement in the energy sector as a whole.

Outputs

1. Process to review fuel price
2. Process to set and regulate fuel quality standards
3. Procedures that help improve storage and handling of petroleum products
4. Identified gaps in the petroleum pricing policies
5. Format on energy data reporting (quarterly reports)

Activities undertaken

1. Developed Tuvalu’s fuel price template and benchmarked it against published data
2. Explored ways to regulate fuel quality standards and migration to low sulfur diesel
3. Discussed storage and handling requirements for petroleum and LPG
4. Identified gaps in the petroleum pricing regulation/policy
5. Analysed energy data (petroleum imports, use of energy and electricity data)

Feedback from Mr. Molipi Tausi, Energy Planner Government of Tuvalu

It has been a fruitful one week attachment at SPC from 19–29 August 2011. I have a better understanding of the fuel pricing template, the fuel supply chain for Tuvalu, as well as areas where the fuel supplier (Pacific Energy) can assist Tuvalu. Site visits to the medium range tanker (MRT) discharging fuel at Suva wharf and a visit to the Suva terminal were good practical experiences for me to better understand the process of fuel supply from Fiji to Tuvalu.

In addition, I was introduced to the development of guidelines for fuel handling and storage requirements as well as the process to review regulations with regards to energy supply, transportation, utilisation and consumption. Also, we discussed ways where SPC can assist in energy data analysis for planning purposes, which is critical for informed decision-making within the department and the ministry.

- The one-week attachment programme was well set out with required focus areas of technical assistance well covered.
- In-office hands on training were thoroughly covered with detailed coverage of the pricing template that resulted in full understanding of the fuel supply chain for Tuvalu.
- Updates on technical support to other PICs in the area of petroleum provided good lessons for technical support for Tuvalu especially in terms of a fuel price review.
- Meetings arranged with the Pacific Energy Regional Management Team and Fiji Department of Energy in Suva strengthened areas of collaboration in terms of technical assistance in the petroleum sector and in the area of energy efficiency.
- Site visits organised to observe the MRT from Singapore discharging fuel at Suva wharf and also the visit to Suva terminal was a good experience to learn first-hand knowledge of the practical side of the fuel supply chain for Tuvalu.
- A visit to Vuda Terminal would be an ideal opportunity to see products transfer from storage facility to LCT bound for Tuvalu.
- A visit with Fiji petroleum inspectors to various retail sites was a good experience to learn of fuel inspection procedures in Fiji and where necessary be regulated and enforced in Tuvalu.

From Ms. Freda Ketapu, Price Inspector, Government of Tuvalu

“I would like to convey my sincere acknowledgment and thanks to SPC for the attachment that I had at SPC. It is an honor to receive this training, which really helps me a lot in capacity building. The training was an inspirational one that really helped me to improve the Tuvalu pricing system, mostly with fuel pricing. Not only did I receive this knowledge and new understanding from this training, however, I would also like to acknowledge you Shakil for the time that you spent with us in training and the negotiations that you did
Mr Shakil Kumar, Petroleum Officer from the Secretariat of the Pacific Community (SPC), visited Palau in early August at the request of the Palau Public Utilities Corporation (PPUC). PPUC invited Mr Kumar to assist with estimating freight charges for diesel fuel imports so as to evaluate proposals from fuel suppliers and set a benchmark for the freight charge component of PPUC’s fuel contract.

Mr Kumar was also hosted by the Palau Energy Office, which is implementing the European Union funded North Pacific ACP Renewable Energy and Energy Efficiency Project (North-REP) in cooperation with SPC.

Mr Kumar stated, ‘It is important for Palau to keep records of petroleum statistics so that the Government can undertake its energy planning role in an informed way. Any commercially sensitive information provided by petroleum companies or the Government to SPC is always kept confidential.’

After meetings with the Palau Energy Office, PPUC, IP&E and Blue Bay Petroleum, the Office of Statistics, and Customs, Mr Kumar gave a presentation to members of the National Energy Committee on the petroleum supply chain in Palau, providing some recommendations as to how lower petroleum prices could be achieved in Palau, and answering questions from the Committee.

Mr Greg Decherong, Director of the Palau Energy Office, expressed his thanks to SPC for Mr Kumar’s visit and said, ‘Understanding the petroleum supply chain and the pricing of petroleum is critical to ensuring that Palau is able to negotiate the lowest possible prices for its gasoline and diesel fuel purchases.’

SPC’s presence in Palau through EU-funded North-REP and SPC’s Energy Programme assistance through Mr Kumar is an example of SPC’s whole of sector approach to energy. Mr Kumar said that, “understanding petroleum pricing, demand and supply including the availability of data provides a good baseline to pitch for renewable energy and energy efficiency.”

Some of the recommendations resulting from SPC’s technical assistance to Palau included:

• the consideration of petroleum being sourced from one location;
• Palau jointly procuring with other countries for supply of petroleum;
• a change to electricity tariffs to allow PPUC to recover all its costs of operation, maintenance, and capital replacement, especially for its fuel tank storage facilities;
• Palau purchasing all its diesel fuel for electricity, and land and sea transport in one contract because greater volumes allowed for negotiating a lower price;
• regulations for price control, and storage and handling for petroleum products;
• fuel quality standards; and
• interim fuel price monitoring.

The technical assistance is supported by North-REP and SPC’s Energy Programme.
The Secretariat wishes to inform all readers that we have changed the Asia Pacific benchmark from tapis crude oil to dated brent. Platt’s dated brent is the true, recognised barometer of global sweet crude oil economics. For this reason it is widely used as a key macro indicator for global economic growth.

The Asia Pacific benchmark dated brent was relatively stable in the third quarter with the exception of two major drops in prices in late June and early August. The dated brent crude oil fell sharply on 27 June to average US$103.61/bbl, before stabilising in July followed by another drop on 10 August averaging US$104.93.

Compared to the second quarter of 2011 (March–May 2011), the dated brent crude oil was US$3.725/barrel or 3% lower in the third quarter of 2011. Crude oil prices were fairly steady in June and July however, it dropped in August pushing the third quarter average prices down by 3%. We have received confirmation from Tonga and Samoa that they have reduced fuel prices in August as a direct result of reduction in Mean of Platt’s Singapore (MOPS) prices.

Crude oil prices remained relatively static for most of June (ranging between US$115 and US$120/bbl) until 22 June announcement by the International Energy Agency (IEA) that member countries would release 60 million barrels of oil reserves over the next 30 days. On the back of this announcement, crude oil prices promptly fell to around US$105/bbl as the market responded swiftly to this news before gradually climbing back over US$110/bbl by the end of June. The IEA is yet to decide if a further stock release will be required; this will likely depend on whether IEA considers the current release of stocksto be sufficient in relieving the projected third quarter supply shortage.

July saw the benchmark crude price, dated brent, continue to trade in a US$110–120/bbl range. Any benefit from IEA member countries release of crude in June was short lived with the market returning quickly to the trading level it had been before the release. Compared to recent months, the price was steady during the month with only small movements in price. While there were indications that the
Prices dropped to US$100/bbl in early August and remain very volatile. These price movements will be reflected in next month’s prices for Pacific islands.

The crude price drop to around US$100/bbl in early August was very short lived with prices climbing since that time to around US$115/bbl by the month end. The sharp drop in early August was a result of a more pessimistic view of the health of the global economic – most commodity and share markets fell at that time.

With the crude market, fundamentals took over and concerns about the supply picture limited the price fall and began to exert upward pressure. Although the Libyan rebels captured Tripoli from Gaddafi’s forces, there was a realisation that it will take some time before supplies from Libya will be re-established. The IEA stock release also ended during August and there is ongoing concern that the release has done little to alleviate an underlying tight supply situation.

**Freight rate**

In the Pacific islands, we use two freight rates for benchmarking. For the northern Pacific islands such as Saipan, Guam, Federated States of Micronesia, Palau and Republic of Marshall Islands, we recommend the use of Singapore to Japan world scale published rates. For the central and southern Pacific islands, we recommend the use of Singapore to Australia world scale rates.

The Singapore-Australia quote is more representative of voyages coming into the Australian/South Pacific region where there are limited or no backload options which are more commonly available for a ship owner going to Japan. The Australia and New Zealand markets have moved to this quote.

The Secretariat also recommended that the central and southern Pacific islands also move to this quote because a fixed percentage multiplier from the Japanese quote is not representative of the differences between these two quotes over time.

The third quarter freight rate cost increased by one percent compared to second quarter for the Singapore to Australia route. The Singapore to Japan route was relatively stable.

The net result in the third quarter was relatively stable for June-July prices and a small drop in prices for August in the Pacific islands. June and July prices were higher, however, MOPS prices dropped in August, which has resulted in a number of Pacific islands reducing the pump price of fuel. These countries include Australia, New Zealand, Samoa, Solomon Islands and Tonga.

Most Pacific countries have also seen appreciation of their currency against the US Dollar in the third quarter as shown in Graph 3.

In summary, the pump price should fall in the last month of the third quarter due to a reduction in Singapore price combined with relatively stable freight rate and appreciation of local currency against the US Dollar.
Two years ago, the Republic of Marshall Islands (RMI) Ministry of Resources and Development’s (MRD) Energy Planning Division (EPD), with AusAID funding, purchased a number of energy monitoring units, and distributed them around various residences and ministries with a view to ascertaining energy use. This was part of a larger vision to ultimately reduce energy use through both energy conservation (EC — the wise use of existing equipment), and energy efficiency (EE — the replacement of inefficient equipment).

Then, a year ago, with funding from Renewable Energy and Energy Efficiency Partnership, EPD in partnership with SOPAC (now SPC) conducted an energy auditing workshop for government departments and other stakeholders. As one of the practical tasks in this workshop, the Public Works Department and MRD buildings were audited. This audit highlighted that the biggest energy user was air conditioning (ACs) (74% and 57% respectively), followed by lighting (14% and 17%) and computing (6% and 16%).

As a first step, EPD has installed some high efficiency (high energy efficiency ratio) air conditioners in the MRD building and already appear to be saving half the electricity (50%). This equates to around 3,500kWh per month or $1,700 worth of electricity – over $20,000 per year at current price of 48.8c/kWh for the government. Total project cost is expected to be $40,000 ($30,000 from Australia via AusAID’s Small Grants Scheme), giving a simple payback of around two years, or less if electricity prices continue to rise. Project lifetime is expected to be at least five years, and more likely ten years (special corrosion resistant coatings were added), so benefits will accrue for another three to eight years after payback. Lighting will be changed from fluorescent tube to light-emitting diode (around 50–70% saving) and desktop computers with laptop (around 50–80% saving). We are now hopeful of reducing energy use, via a combination of EC and EE, by up to two thirds once the project is complete early next year.

In contrast, the payback for the hospital’s solar photo voltaic (PV) system is over 25 years (this is a difficult roof to install on however), and for the College of Marshall Islands, it is over eight years, showing that renewable energy is presently four to over ten times more expensive than EE.

There are also technical limits as to how much grid connected PV can be easily absorbed by any utility (eg. Marshalls Energy Company (MEC) around 15% of peak power) and if you add storage to overcome this limit this can double or even treble costs.

Only after an aggressive EE project is implemented, should projects such as grid-connected PV systems be considered. Another consideration is that RMI and MEC do not yet have a set of regulations to ensure grid-connected systems are safe, however, this is being addressed.

In the meantime, there is much money to be saved by undertaking an energy audit and implementing an EE programme.

Following are tips for operating and maintaining ACs:

1. Keep temperatures at 77°F (25°C) or above. If you need to feel cooler, increase the fan speed, don’t decrease the temperature. Lowering the temperature does not make the AC cool faster. It will work at maximum output until it reaches the correct temperature.
2. Clean the filters regularly — check at least every two weeks, and if dirty, clean it. A dirty filter will stop the unit working properly, and use more energy.
3. Close the door to the room. We are not trying to aircondition the neighbourhood, just our rooms.

If we all work together, we can make a difference.
The industrial sector, in most of the Pacific Island countries, has always been an area perceived to be a major energy consumer yet not much information is available to demonstrate this nor are many efforts undertaken to address the high energy dependency of this sector and the impact of this on the total operational cost of the companies. Taking up the initiative, the United Nations Industrial Development Organization (UNIDO) and the Secretariat of the Pacific Community (SPC) engaged IT Power based in Australia to undertake a feasibility study in four selected countries — Palau, Samoa, Tonga and Vanuatu.

The study, titled “assessment of renewable energy (RE) and energy efficiency (EE) potential in industries in selected Pacific Island States”, commenced in June 2011. As part of the in-country missions undertaken in August 2011, the consultants accompanied by the SPC Energy Programme staff visited various companies in the food and beverage sector, the manufacturing sector, and the hotel sector.

Driven by high energy costs both from electricity tariffs and fuel cost, it was noted that a number of the industries have at one point attempted to make some form of improvement covering some energy efficiency activities or renewable energy investments to lower their energy cost. One such sector was the hotel industry. The survey revealed that most of the hotels had explored many opportunities for improving energy efficiency practices targeting air conditioning and lighting. For renewable energy opportunities on the other hand, the hotels were looking at switching to solar water heaters.

The in-country mission team also visited the power utilities, selected government bodies and other energy stakeholders, looking at how they contribute to the countries’ energy sector and also to identify barriers and opportunities for EE and RE initiatives in the industrial sector. An opportunity assessed was the possibility for independent power producers to supply to the power utilities and the notion that industries could look into net metering as well apart from the options of RE and EE for reducing their energy consumption bill. The various opportunities were assessed to provide a holistic view of the benefits and financial returns for the industries if they were to invest in this initiative.

IT Power is currently drafting the assessment report of the study, which is expected to be published sometimes in early 2012. The report will select the priority sites characterising their suitability for fuel substitution with local RE and improved EE measures and practices. The findings will then feed into funding proposals for the realisation of the opportunities identified in the assessments. These are part of the follow-up options from the feasibility study. Other opportunities may also include co-financing options from UNIDO as well.

The in-country mission team will also like to acknowledge the great assistance provided by the staff of the energy offices in the four countries that enabled the team to undertake a successful study mission in a timely manner.
Maximising the benefits of solar-powered energy

By Uzumma Erume, Energy/Transport Economist, ODI Fellow, EDD, SPC, Suva, Fiji

In the last issue, we reported on preparations for the impact assessment for the North Pacific ACP Renewable Energy and Energy Efficiency Project (North-REP). The impact assessment consisted of four phases: sample target group identification; baseline data collection; Ex post impact assessment and report preparation. Phase 1 has now been completed and considerable progress made in Phase 2 following a scoping and data collection mission to Palau, Republic of Marshall Islands (RMI), and Federated States of Micronesia (FSM) in August.

The mission undertook a number of consultations and surveys with key government officials, school principals and health assistants, to assess the nature of current access to electricity and the expected benefits of electrifying public facilities and households in non-electrified islands. The results of this mission will form an integral part of the impact assessment. For example in FSM, valuable data was collected, which will be used to underpin progress and success indicators and also support the Energy Specialist in making informed decisions as to which facilities are ready for installation and those that, as of today, are not.

The issue of sustainability has been of paramount importance since the inception of this project. We are keen to see that the activities undertaken by SPC have a long-lasting impact on communities while also minimising the cost of maintaining access to electricity in public facilities and households for the current and future administrations. For this reason, we are keen to see that governments have considered long-term approaches to sustainability to ensure sufficient funds are available to support maintenance of the installations throughout the lifespan of the systems.

In RMI, many steps have been taken to address this issue. A thorough financial analysis of the tariff required to sustain the installations has been undertaken, progressed through cabinet papers and awareness campaigns to inform the public of the costs associated with solar-powered energy. There are also several user-pay models being considered, which will further reduce non-payments; these range from the involvement of local women’s groups to small commercial enterprises located on the outer islands.

In FSM, the mission highlighted that there were a number of schools and dispensaries that will probably need to undergo further infrastructural work before they can be considered for installation — all with the view to fully maximise the benefits of the project. The mission also enabled us to document some excellent examples of public facilities that have been maintained and heavily utilised by the community, suggesting that access to electricity would also further enhance the quality of public services and life for the communities surrounding the schools.

Although considerable efforts have been made by Pacific
In July and August 2011, the Secretariat of the Pacific Community (SPC) provided in-country technical assistance to Samoa and Tonga to progress their energy database activities. Technical assistance work in Samoa involved undertaking follow-up capacity building on energy data compilation and analysis, updating Samoa’s 2010 energy balance and compilation of their 2010 energy review which is currently in draft format. Based on the current compilation, Samoa in 2010, was estimated to have consumed around 122.4 kilo tonnes of oil, of which 34% was met by biomass, 63% by petroleum products while the remaining 3% was met by hydropower, coconut oil biofuel and solar. The in-country technical assistance also provided an opportunity for SPC to review and update Samoa’s energy security indicators for 2009.

SPC’s assistance to Tonga focused more on data collection and a number of key stakeholders were visited for this purpose. As part of updating their energy database, the Tonga Energy Planning Unit is also working on publishing their second energy statistics year book from the period of 1994 to 2010. Progress to date still covers data collection and follow-up requests. A noted challenge from this exercise was having access to relevant data from key stakeholders in Tonga. SPC, in addition to providing assistance on the data collation, will also be assisting Tonga’s Energy Planning Unit in drafting and publishing the energy statistics year book. The last energy statistics year book that Tonga compiled was back in 1994, covering a period of 1980 to 1993.

Access to energy has a paramount importance as a necessary condition for the achievement of most, if not all, of the Millennium Development Goals. However, access to energy has to be seen as access to the services that modern energy can deliver.

Many of the decisions to be made in progressing this project will have a central element of sustainability in the outcomes to ensure that risks have been identified and risk mitigation actions have been put in place. It is becoming apparent from the information gathered that this approach early in the project implementation stage is a key factor in ensuring the achievement of meaningful and long-term socio-economic improvements.

**Energy data assistance work to Samoa and Tonga**

*By Frank Vukikomoala, Energy Programme Assistant, Energy Programme, EDD, SPC, Suva, Fiji*

In July and August 2011, the Secretariat of the Pacific Community (SPC) provided in-country technical assistance to Samoa and Tonga to progress their energy database activities. Technical assistance work in Samoa involved undertaking follow-up capacity building on energy data compilation and analysis, updating Samoa’s 2010 energy balance and compilation of their 2010 energy review which is currently in draft format. Based on the current compilation, Samoa in 2010, was estimated to have consumed around 122.4 kilo tonnes of oil, of which 34% was met by biomass, 63% by petroleum products while the remaining 3% was met by hydropower, coconut oil biofuel and solar. The in-country technical assistance also provided an opportunity for SPC to review and update Samoa’s energy security indicators for 2009.
### Calendar of Events

**Calendar of events of the Pacific Energy Oversight Group (August–December 2011)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Venue</th>
<th>Responsible Agencies</th>
<th>Officer Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>15–22 August</td>
<td>Field mission for the UNIDO-SPC formulation of a project proposal on EE in the industrial sector</td>
<td>Koror, Palau</td>
<td>SPC &amp; IT Power</td>
<td>Emanuele Taibi, <a href="mailto:emanuele@spc.int">emanuele@spc.int</a> Philippe McCracken <a href="mailto:philippe.maccracken@itpau.com.au">philippe.maccracken@itpau.com.au</a></td>
</tr>
<tr>
<td>15–22 August</td>
<td>Field mission for the UNIDO-SPC formulation of a project proposal on EE in the industrial sector</td>
<td>Port Vila, Vanuatu</td>
<td>SPC &amp; IT Power</td>
<td>Frank Vukikomoala, <a href="mailto:frankv@spc.int">frankv@spc.int</a> Joe Wyder, <a href="mailto:jowwyder@itpau.com.au">jowwyder@itpau.com.au</a></td>
</tr>
<tr>
<td>22–26 August</td>
<td>Regional gender and climate change workshop</td>
<td>Bangkok, Thailand</td>
<td>SPREP</td>
<td>Nixon Kua, nixonksprep.org</td>
</tr>
<tr>
<td>29 August–4 September</td>
<td>Field mission for the UNIDO-SPC formulation of a project proposal on EE in the industrial sector</td>
<td>Apia, Samoa</td>
<td>SPC &amp; IT Power</td>
<td>Frank Vukikomoala, <a href="mailto:frankv@spc.int">frankv@spc.int</a> Simon Troman <a href="mailto:simon.troman@itpau.com.au">simon.troman@itpau.com.au</a></td>
</tr>
<tr>
<td>29 August–4 September</td>
<td>Field mission for the UNIDO-SPC formulation of a project proposal on EE in the industrial sector</td>
<td>Nuku’alofa, Tonga</td>
<td>SPC &amp; IT Power</td>
<td>Ivan Krishna, <a href="mailto:ivank@spc.int">ivank@spc.int</a>    Philippe McCracken <a href="mailto:philippe.maccracken@itpau.com.au">philippe.maccracken@itpau.com.au</a></td>
</tr>
<tr>
<td>5–9 September</td>
<td>Energy display at the Pacific Forum Meeting</td>
<td>Auckland, New Zealand</td>
<td>SPC &amp; SPREP</td>
<td>Solomone Fifita, <a href="mailto:solomone@spc.int">solomone@spc.int</a> Silia Ualesi, <a href="mailto:siliau@sprep.org">siliau@sprep.org</a></td>
</tr>
<tr>
<td>12–16 September</td>
<td>Joint DIREKT/North-REP capacity building workshop</td>
<td>Majuro, RMI</td>
<td>USP &amp; SPC</td>
<td>Anirudh Singh, <a href="mailto:singh_ag@usp.ac.fj">singh_ag@usp.ac.fj</a> Arieta Gonelevu, <a href="mailto:arietag@spc.int">arietag@spc.int</a></td>
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<tr>
<td>September (tbc)</td>
<td>Training workshop for representatives of development banks</td>
<td>Koror, Palau</td>
<td>IUCN</td>
<td>Anare Matakiviti, <a href="mailto:anare.matakiviti@iucn.org">anare.matakiviti@iucn.org</a></td>
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<tr>
<td>26–28 October</td>
<td>IRENA consultation workshop with Pacific member states and partners</td>
<td>Sydney, Australia</td>
<td>IRENA</td>
<td>Dolf Gielen, <a href="mailto:dgien@irena.org">dgien@irena.org</a></td>
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<tr>
<td>4–5 October</td>
<td>Meeting on a certification program for designers and installation technicians</td>
<td>Suva, Fiji</td>
<td>SEIAPI &amp; USP</td>
<td>Geoff Stapleton, <a href="mailto:gses@bigpond.com">gses@bigpond.com</a> Dr Atul Raturi, <a href="mailto:raturi_a@usp.ac.fj">raturi_a@usp.ac.fj</a></td>
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<tr>
<td>October (tbc)</td>
<td>Utility training workshop</td>
<td>Nadi, Fiji</td>
<td>PPA</td>
<td>Andrew Daka, <a href="mailto:andrewd@ppa.org">andrewd@ppa.org</a> Gordon Chang, <a href="mailto:gordnchg@ppa.org.fj">gordnchg@ppa.org.fj</a></td>
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<tr>
<td>October (tbc)</td>
<td>PEC fund joint committee meeting</td>
<td>tbc</td>
<td>PIFS</td>
<td>Jonathan Mitchell <a href="mailto:jonathanm@forumsec.org.fj">jonathanm@forumsec.org.fj</a></td>
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<tr>
<td>October–December (tbc)</td>
<td>National workshops on energy planning and policy for Fiji, Cook Islands, Kiribati, Nauru, Palau, Solomon Islands, FSM</td>
<td>tbc</td>
<td>SPC</td>
<td>Frank Vukikomoala, <a href="mailto:frankv@spc.int">frankv@spc.int</a></td>
</tr>
<tr>
<td>1–8 November</td>
<td>Tuvalu Petroleum National Training</td>
<td>Funafuti, Tuvalu</td>
<td>SPC</td>
<td>Shakil Kumar, <a href="mailto:shakilk@spc.int">shakilk@spc.int</a></td>
</tr>
<tr>
<td>October–November (tbc)</td>
<td>Multi-partite review meeting of the PIGGAREP and meeting of the mitigation working group of the Pacific climate change roundtable</td>
<td>tbc</td>
<td>SPREP</td>
<td>Silia Ualesi, <a href="mailto:siliau@sprep.org">siliau@sprep.org</a></td>
</tr>
<tr>
<td>14–18 November</td>
<td>TEP VERTES workshop</td>
<td>Noumea, New Caledonia</td>
<td>SPC &amp; New Caledonia Government</td>
<td>Olivier Auguin, <a href="mailto:oliviera@spc.int">oliviera@spc.int</a> Bastian Morvan, <a href="mailto:bastian.morvan@gouv.nc">bastian.morvan@gouv.nc</a></td>
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