

DEPARTMENT OF ENERGY



NATIONAL WORKSHOP REPORT

The Technical Visit And Workshop To Share Best
Practices In Renewable Energy: Port Vila &
Santo, Vanuatu: 3-7 August 2009

By

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1.0 INTRODUCTION

A workshop was held in the Department of Energy Conference Room on 11th September 2009 to communicate outcomes from the technical visit and workshop to share best practices in renewable energy that was held from 3-7 August 2009 in Efate and Santo in Vanuatu. The visit was made possible through the PIGGAREP program based at the Secretariat for the Pacific Environment Program in Apia, Samoa.

Workshops were conducted around field trips and these were held either in Port Vila (Vasanoc Building) or in the hotel in Luganville, Santo. The workshops were to share experiences on renewable energy from the region. Participating countries include Kiribati, Samoa, Tonga, Tuvalu, Fiji, Solomon Islands, Vanuatu and Papua New Guinea.

Field visits were undertaken to the Unelco Power Plant near Port Vila, Port Orly village and the Sarakata Hydro works on Santo, the Devils Point wind farm and other interesting areas around Efate. Renewable energy projects visited included coconut oil plants that produced coconut oil as a fuel, a run of river hydro, solar power examples, a biogas plant, a wind power development as well as a disused gassifier project.

Apart from participating countries there was also a participant each from the Secretariat for Pacific Applied-Geosciences Commission and the environmental organisation IUCN. The program was facilitated by the Vanuatu Energy Office and was led by the PIGGAREP Program Manager Mr. Solomone Fifita.

2.0 OBJECTIVE OF WORKSHOP

The objectives of the workshop were two fold. Firstly it was to communicate the contents of the Vanuatu technical visit and secondly to discuss ways in which Fiji could advance the cause for renewable energy; especially ways to get the Fiji Electricity Authority (FEA) to use more renewables and replace their thermal power plants. The FEA was purposely not invited to the workshop to allow the unhindered discussion on their operation.

3.0 WORKSHOP PROGRAMME

The workshop programme is as follows :

2.00 - 2.30pm	Discussion on the trip to Vanuatu and workshop aims
2.30 - 3.00pm	Coconut Oil As A Fuel (Powerpoint Presentation)
3.00 - 3.30pm	Run Of River Hydro-Electricity, Wind Power Development (Powerpoint Presentation)
3.30 - 4.00pm	Biogas Development; Solar Energy Into The Grid; Gassifier; (Powerpoint Presentation)
4.00 - 4.30pm	Relevant Policy Actions (Powerpoint Presentation) Discussion/Q&A
4.30 pm till late	Continue discussion over the yaqona bowl

4.0 DISCUSSIONS AND MATTERS ARISING FROM THE WORKSHOP

Workshop participants were encouraged to ask questions during the course of the presentations and at the end of the workshop informally over a bowl of yaqona. The following issues were discussed.

- (1) The question was asked whether Vanuatu has a coconut oil standard and the reply was that it appears that there was no standard but in both the Unelco plant and at Port Orly the water quality of the oil was such that moisture content of the oil was less than 0.05%.
- (2) The question was then asked as to the significance of moisture content and the reply was that higher moisture contents will hinder the burning of the fuel and as such the “drier” the fuel the better it will burn.
- (3) The question was asked as to what is meant by income generating capacity in the village and the answer given was that for Port Orly not all residents would be cutting copra but some could be fishing and some supplying the local butchers and thus get income from the alternative sources that use energy to support their business.
- (4) The issue of leadership in the community was discussed and it was acknowledged that community projects in Fiji also suffer where the community leadership structure is weak. The influence of the Catholic Church in Port Orly was acknowledged.
- (5) The particulars of Sarakata Hydro was very interesting to the participants as it is a sustainable hydro project, unlike the dams which would one day close when siltation fills up the lake behind the dam. A project proposal is being made based on the example of Sarakata to the UNDP to see what potential exist in Fiji on such run-of-river hydro developments. The question was asked whether the Department considered EIA to be an effective tool for planning and this was agreed to. It was also pointed out that the conduct of EIA’s is now compulsory for all Government implemented projects under the Environment Management Act.
- (6) The issue of the FEA wind farm at Butoni was discussed in light of the presentation on the Devil’s Point wind farm. The Department had on three occasions alerted FEA that there is insufficient wind in Butoni to support such a wind farm but FEA still proceeded with the project. It was felt that if the wind mills were relocated to the coastal areas of Nadroga they would get more sea breezes produced by the temperature differential between land and sea and would thus be producing more power than at Butoni.
- (7) The representative from the development arm of the Seventh Day Adventist Church was interested in biogas and asked whether a subdivision could be made where the sewerage could be collected into a single system and then used to generate energy for cooking and lighting to the subdivision. The answer given was that it is possible but the gas would have to be cleaned and the approval of the planning and environmental authorities would be needed.
- (8) The representative from the Department of Environment indicated that when they inserted a pipe into the old Suva rubbish dump in Lami with a weather balloon

- connected to the other end they collected four cubic metres of methane gas after one hour.
- (9) The issue of the temperature of the producing environment in the compact biogas plants was discussed and it was pointed out that the microbes needed to produce the gas need a certain temperature range to work. It was agreed that more research is needed on this with the compact biogas designs the Department has.
 - (10) The use of the stadium in Tuvalu to generate electricity for the grid generated interest. The observation that the air conditioning of the control housing unit in Tuvalu with temperature cut-offs was something that was missing from the Nabouwalu hybrid system (solar, wind and thermal) control housing as well as the Port Orly office that houses the computer used for recharging the meter cards. The Acting Director of Energy agreed that in the study to determine the problem at Nabouwalu it was found that the high temperature of the control housing unit caused the initial failure of the hybrid system. Participants agreed that the use of air conditioning systems need to be factored in especially where sensitive computer or switching equipments are installed in order to maintain a constant temperature in the control housing unit.
 - (11) The Department sees producer gas produced from gassifiers as a viable alternative to diesel generating sets currently installed all over Fiji. The lessons from the Vanuatu example highlighted the need to empower locals with the technology to ensure that they can run the project even if the people who introduce the technology leave. The Department should pursue the installation of gassifiers with more vigour.
 - (12) The use of small taxis in Luganville was noted but the comment was made that if such a policy was introduced to Fiji it would only be able carry two people compared to the four that the bigger Fiji taxis carry.
 - (13) On the question of getting FEA to use more renewable energy to replace their thermal power stations it was felt that the proposed review of policy issues and the Electricity Act with a view to putting together an all encompassing Energy Act will be the most effective way to regulate the sector, including the FEA.

5.0 CONCLUSION AND EVALUATION OF THE VANUATU WORKSHOP

The conclusion that can be drawn from this workshop is that the interest in renewable energy is definitely there but the general application through the FEA grid network is hampered by the absence of guiding legislation that is controlled by the Department of Energy. This is planned to be rectified through planned changes to the Electricity Act and a review to the whole energy framework to be undertaken through consultancy.

The Vanuatu workshops and technical visits have been helpful in that they have highlighted the various options available in renewable energy as well as the problems to look out for. It has also highlighted the effectiveness of cooperation between Government and the private sector especially where the private sector has been given the opportunity to lead in the development.

The availability of representatives from the region allows close consultations on aspects of renewable energy developments and enables comparisons between their projects and what has happened in Fiji.

The Vanuatu technical visit and workshop was a success.

6.0 ANNEXES

6.1 PARTICIPANTS LIST AND THEIR CONTACTS

	PARTICIPANT	ORGANISATION/UNIT
1	Mr. Savenaca Cavalevu	ADRA Seventh Day Adventist Church HQ Suvavou Lami
2	Mr. Jope Davetanivalu	Principal Environment Officer Department of Environment Raojibhai Patel Street Suva
3	Peceli Nakavulevu	Acting Director of Energy Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
4	Jimione Fereti	Principal Technical Officer Rural Electrification Unit Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
5	Mr. Vamarasi Kafoa	Project Manager Sustainable Energy Financing Project Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
6	Susana Pulini	Senior Scientific Officer Technical Division Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
7	Mr. Waisea Cavunailoa	Technical Officer High Grade Rural Electrification Unit Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
8	Mr. Ashneil Karan	Librarian Department of Energy and Rural Electrification Ratu Mara Road Samabula

	PARTICIPANT	ORGANISATION/UNIT
		Suva
9	Mr. Tomasi Qabole	Rural Electrification Unit Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
10	Mr. Mikaele Belena	Senior Scientific Officer (Biogas) Technical Division Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
11	Mr. Paula Katirewa	Senior Scientific Officer (Solar) Technical Division Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
12	Joeli Valemei	Solar Energy Unit Technical Division Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
13	Mr. Denise Chand	Solar Energy Unit Technical Division Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
14	Ms. Losana Mualaulau	Scientific Officer Technical Division Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
15	Ms. Navinita Devi	Scientific Officer Technical Division Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
16	Mr. Jope Caginibua	Rural Electrification Unit Department of Energy and Rural Electrification Ratu Mara Road

	PARTICIPANT	ORGANISATION/UNIT
		Samabula Suva
17	Ms. Kavita Prasad	Research Officer Biofuel Development Unit Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
18	Mr. Sumeet Naidu	Performance, Standards and Labelling Unit Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva
19	Mr. Asivorosi Raileqe	Rural Electrification Unit Department of Energy and Rural Electrification Ratu Mara Road Samabula Suva

6,2 POWER POINT PRESENTATION GIVEN

- Attached as a separate file