

**Pacific High-level Policy Dialogue on
“The Role of Macroeconomic Policy and Energy Security in supporting
Sustainable Development in the Pacific”**

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Presentation

Fiji National Energy Security

by

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FIJI NATIONAL ENERGY SECURITY

Presentation at the “HIGH LEVEL POLICY
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AND ENERGY SECURITY SITUATION IN THE
PACIFIC”

9th October 2012

1.0 INTRODUCTION & MINERAL FUEL SITUATION

- This importation of fossil fuels in Fiji accounts to about 34% of the total fuel bill. With the current unsustainable trends it is impinging on economic and other social programs. With this situation Government as part of its macro economic strategy is working towards addressing this situation through promoting the use of renewable energy and energy efficiency.
- The above situation is further compounded or directly impacts economic growth, inflation, foreign reserves and Government initiated capital programs.
- According the Fiji Bureau of Statistics Fiji Imported a total of 2.5billion (2,525,765,181) liters of mineral fuel from 2005 – 2009. On average Fiji imports around 505 Million liters of fuel. From a balance of payment perspective, Fiji has spent around some \$2.9billion on mineral fuels for that period amounting to about \$580Million per year.

MINERAL FUEL IMPORTS SUMMARY (2005 – 2009)

YEAR	DOMESTIC MINERAL FUELS		MINERAL FUELS RE-EXPORTED		FUEL USED DOMESTICALLY	
	VOLUME	VALUE (\$)	VOLUME	VALUE (\$)	VOLUME	VALUE (\$)
2005	522,210,243	469,570,886	351,087,260	277,299,549	873,297,503	746,870,435
2006	596,799,198	690,399,751	301,329,670	287,078,951	898,128,868	977,478,703
2007	515,751,075	609,873,042	292,215,260	286,419,307	807,966,335	896,292,349
2008	431,159,072	731,826,498	239,648,624	405,084,930	670,807,697	1,136,911,405
2009	459,845,593	402,552,044	253,801,405	241,285,372	715,646,998	643,837,414
Total	2,525,765,181	2,904,222,221	1,438,082,220	1,497,168,109	3,965,847,401	4,401,390,306

VOLUME OF DOMESTIC FULL USAGE (2005 – 2009)

Categories	2005	2006	2007	2008	2009	Total
Motor Spirit	49,144,081	61,414,323	60,520,397	49,404,282	69,270,459	289,753,542
Aviation Turbine Fuel	93,551,555	152,359,776	141,588,270	112,649,150	137,361,129	637,509,880
Automotive Diesel Oil	101,524,300	70,727,269	50,011,951	33,922,843	141,560,188	397,791,551
Industrial Diesel Oil	277,990,307	313,252,830	263,630,457	235,182,797	111,653,817	1,200,710,208
Total	522,212,248	596,801,204	515,753,082	431,161,088	459,847,602	2,525,775,781

FIJI'S ELECTRICITY SECTOR

- In terms of the Fiji's GDP, electricity sector is an important component of the Fiji's economy with annual contribution of around \$56million. The electricity sector has a weighing of 1.4 percent in the GDP computation.
- Installed Capacity: 112MW (Hydro) + 92.1MW (Diesel) + 10MW (Wind Farm) + 9MW (Tropik IPP - Biomass) + 5MW (FSC – 6 months)
- Peak Electricity Demand: 144MW
- Number of Customers – 140,000
- FEA which was established in 1966 operates only in three islands in Fiji, namely, Viti Levu, Vanua Levu and Ovalau with total customers of around 156,335. This comprised of 141,504 domestic customers; 14,739 commercial customers and 92 large industrial customers.
- The rest of the islands in Fiji are covered by the Rural Electrification Program administered by the Government.
- For the grid electricity supply, four types of energy sources namely hydro powered by water, thermal powered by diesel fuels, wind and biomass currently used by Independent Power Producers (IPPs) like FSC and Tropik Woods to generate electricity. renewable energy sources accounts for 60 percent of the electricity generated by FEA while the balance of 40 percent is generated from diesel fuel. On energy sources, hydro accounts for 58 percent, thermal 39percent, wind (1%) and biomass (2%).

Viti Levu – Grid Network



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3.0 RURAL ELECTRIFICATION PROGRAMS AND GOVERNMENT STATIONS

- For other parts of Fiji especially in the rural areas and maritime islands, electricity is provided mostly from diesel generators under a Government subsidized Scheme administered by the Department of Energy. There are altogether some 1,168 registered villages around the country and all of them have diesel generators installed for them by the Government. On average, each village has 100 houses, so collectively these villages have close to 120,000 houses. Under this Government Subsidized Scheme.
- Quite apart from these registered villages, some ten big islands in Fiji are also provided with electricity from the Government Stations on the islands managed by the Public Works Department (PWD). These islands include Taveuni, Vanuabalavu, Koro, Gau, Kadavu, Lakeba, Rotuma, Moala and Cicia. These Government Stations are providing electricity to villages on the islands from their 100KVA diesel generators sets.
- Given the high prices of diesel for rural maritime communities in this country, the Fiji Government, five years ago started installing Solar Home Systems in the rural and maritime islands instead of diesel generators. As a result, diesel generators are slowly being phased out in the rural maritime islands to be replaced only by Solar Home Systems. These solar home systems cost around F\$3000 per unit to be installed in each home in Fiji.

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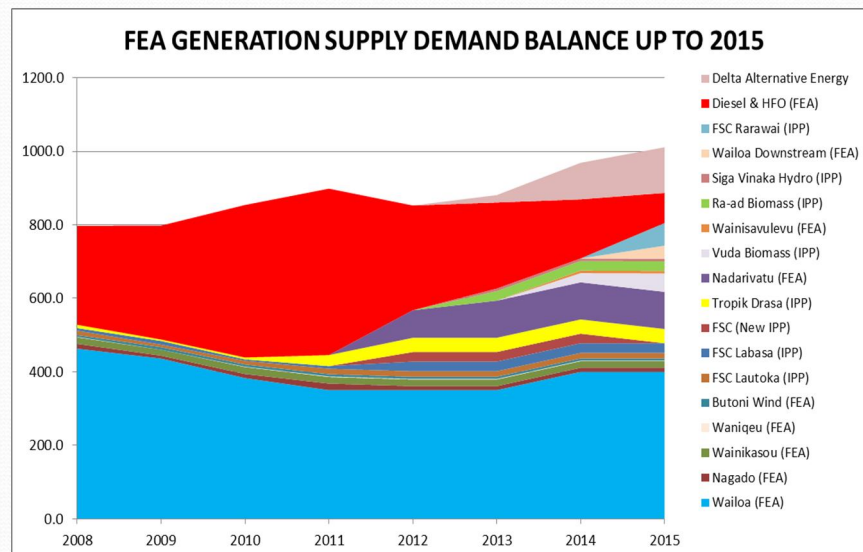
4.0 RURAL ELECTRIFICATION SCHEME – SOLAR HOME SYSTEM

- Given the high prices of diesel for rural maritime communities in this country (began way back in 1970). In 1993 the policy was revised and adopted assistance to communities in terms of grid connection and other renewable energy. The total investment to date amounts to a little over \$100.0 Million.
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- At present, the Government of Fiji is allocating \$5million annually to install solar home systems in the rural areas. Already some 1,415 Solar Home Systems have been installed in the provinces of Bua, Macuata, Cakaudrove in Vanua Levu and Navosa in Viti Levu under this Government program.
- In addition, some 3,000 Solar Home Systems are being installed in the maritime provinces of Lau, Lomaiviti, Kadavu, Rotuma and Yasawas under the Pacific Environment Community (PEC) Funding provided by the Government of Japan under PALM 5 program. Japan provides some US\$66million to Pacific island countries for this program and Fiji share is around \$4.8million.

5.0 FIJI DEMAND AND SUPPLY OF ELECTRICITY

- According to a national Energy Security Situation Report for Fiji, prepared by SMEC an Australian Consultancy company in 2009, the total electricity demand for Fiji from year 2005 to 2008 have been adequately provided by FEA. This means that there is zero or Nil unmet electricity load for Fiji consumers.
- According to this Report, in 2005, the electricity demand from Fiji consumers was 651,877MWh. To satisfy this demand, FEA produced a total of 684,773MWh of electricity for the same period. This process continued year in and year out up to 2008.
- In terms of peak demand, according to the FEA, total peak demand for Viti Levu is about 141.2MW. For Vanua Levu, peak demand in Labasa is 7.8MW while for Savusavu it is 1.9MW. Finally for Ovalau, peak demand is 1.9MW.
- For rural electrification we are looking at power reliability, availability and other issues with the intention of improving supply in the islands. With this initiative we are looking at robust Remote Area Power Supplies.

Fiji Supply and Demand Balance



Energy Efficiency and Conservation Initiatives in Fiji

- Awareness through the Fiji Energy Efficiency Promotions.
 - Ø Awareness
 - Ø Domestic Household Initiatives
 - Ø Fiji Business Excellence Award
 - Ø Schools Initiative
- Low Carbon Initiatives for Hotels, Commercial and Industrial Sectors
- Minimum Energy Performance Standards
- Fiji Building Codes

Funding Requirements

Total investment required:

- FEA Renewable Energy Generation Capex Plan – F\$450M
- IPP Renewable Energy Generation Capex Plan – F\$350M

The FEA plans to fund some of these schemes and expects the private sector and independent power producers (IPP) to fund the remaining – mainly power generation projects.

8.0 TRANSPORT SECTOR

- According to the Reserve Bank of Fiji, the transport sector, comprising of land, maritime and air contributes around 12percent of Fiji's GDP. It is the biggest sector of the Fiji economy.
- In terms of mineral fuel consumption, the transport sector utilizes about 45 – 50% of all fuel imports .
- Biofuel Industry Development; Biodiesel and Ethanol Work. Standards, Biofuel Lab (Quality Assurance). Biodiesel work for Maritime Communities and other Feedstock Development. Enticing Private Sector participation in this area.

Other Important Activities in the Sector

- Review of the Fiji National Energy Policy / Energy Act.
- Renewable Energy Research and Development (Budgetary Program; Biogas / Stoves – Cooking, Wind Regimes, Wave and Tidal Resources).
- Financing through the World Bank SEFP – Promotion of Renewables and Energy Efficiency.
- GEF 4 – Facilitating Investment for On Grid Power Development (IPP Participation in the Sector).
- GEF 5 – Private Sector Participation in Energy Efficiency & Conservation Initiatives.
- Government Commitment in the Sector (Government Guarantee / DOE Budgeting).

Vinaka & Thank You



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