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FINAL DETERMINATION ON ELECTRICITY TARIFF RATES

FIJI ELECTRICITY AUTHORITY

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Promoting Competition in the Fiji Markets

1.0 Introduction

- 1.1 Energy is the vital basis of the development of human society, which is associated with several aspects of the social production and daily life. It is the basic building block of economic development.
- 1.2 With increasing world population and the rising living standards, the demand for energy in the world is steadily increasing. As energy is the important resource and motive power, its cheap and stable supply is the safeguard of the economy and social development. Developing countries are facing the double pressures of economic growth and environmental protection as they have entered the 21st century.
- 1.3 Among energy products, electricity is the high-quality secondary energy and the important material base of industrial production and people's life. Electricity is the most flexible form of energy that constitutes one of the vital infra-structural inputs in socio-economic development. Electricity is demanded for household, education, entertainment and commercial and industrial activity.
- 1.4 FEA has a natural monopoly in the generation, transmission, transformation, distribution and sale of energy either in bulk or to individual customers in any part of Fiji.
- 1.5 Given the monopoly status of FEA in the supply of electricity in Fiji, electricity tariff rates in Fiji are subject to price control via **Commerce (Control of Prices for Supply of Electricity and Ancillary Services) Order 2012**.
- 1.6 In October 2010, the Commission approved a forward looking forward looking tariff plan. For the Commercial category, the increase was awarded in two steps. The first increase was effective from 1st November 2010 while the second increase was effective from 1st April, 2011.
- 1.7 In making the determination in October 2010, the Commission stated that it looks forward to Fiji generating and supplying most of its electricity requirements from renewable energy sources in the near future.
- 1.8 The Commission further noted that in such a scenario, the owners of the capital will benefit via higher returns, the country will benefit by making saving on its import expenditure, local economy will benefit by increased economic activity via IPP's, the environment will benefit via less pollution and the end users will also benefit by having significantly lower tariff rates.
- 1.9 FEA's authorized tariff rates in 2010 has been awarded based on a renewable energy to non renewable energy ratio of 60/40.
- 1.10 However, with the recent commissioning of the newly built Nadarivatu Hydro scheme (40 MW), the renewable/nonrenewable energy mix now stands at 75.9%. This implies that FEA should now pass on a part of the increased returns arising from the improved renewable/nonrenewable energy mix to its shareholders, part to investment in existing infrastructure ,part to sourcing of new renewable energy sources while remaining to consumers via reduction in tariff rates.

2.0 Legal Framework

- 2.1 The Commission is empowered under the **Commerce (Control of Prices for Supply of Electricity and Ancillary Services) Order 2012** to control and/or regulate the prices for electricity and ancillary services in Fiji.
- 2.2 Paragraph 2 of the said Order authorizes the Commission to control the prices for the supply of electricity and services pertaining to the supply of electricity in all quantities, qualities and grades or classes are controlled.
- 2.3 This determination is made pursuant to the Commerce (Control of Prices for Supply of Electricity and Ancillary Services) Order 2012.

3.0 Last Determination on Electricity Tariff

- 3.1 On 24th of May 2010, the Commission formally received an application [submission] from the Fiji Electricity Authority (hereinafter referred to as "FEA", to implement an average 8.82 cents per unit tariff increase for electricity use.
- 3.2 At that time, FEA's weighted average tariff rate was 25 cents. Following a thorough examination, Commerce Commission decided to undertake a review of the tariff rates in two phases.
- 3.3 In the first phase, anomalies in tariff rates were removed. In the second phase, a much more realistic tariff rates was established taking into account costs of FEA, its efficiency and its ability to fund renewable energy projects as well as its ability to meet debt covenants.
- 3.4 In the first phase, the tariff alignment resulted in an increase in the weighted average tariff rate to 33 cents.
- 3.5 On 25th of August, 2010, FEA made a more comprehensive submission requesting for an increase in tariff rate to 39.2 cents. FEA's request for an increase was based on the following factors:
- That IPP entry into renewable energy generation will be enhanced via a higher tariff rates to them. With the entry of increased number of IPP's, FEA's target of producing 90% of its total energy requirement from renewable sources could be achieved at least by 2015;
 - That it will enable FEA to earn a commercial return on the equity invested by its shareholder, the Fiji Government;
 - That FEA will be able to maintain its gearing ratio (debt/debt + equity) below the maximum target level of 50% and enable it to meet the debt covenants imposed by China Development Bank and ANZ Bank when FEA obtained the foreign currency loans of US\$100 million to construct Nadarivatu renewable hydro power project;
 - That FEA is able to deliver on to government macro-economic targets, in particular to reduce Fiji's fuel import costs and save foreign exchange which could be around F\$75 million per year;
 - That correct prices in the market will push users to undertake efficient consumption behavior;
 - That removal of subsidies will eliminate the Dead Weight Loss in the energy market during the subsidy era; and,
 - That FEA, with a commercial tariff structure will make listing and sale of shares via the stock market more plausible.

3.6 After a critical examination of the submission from FEA and taking into consideration various factors the Commission approved a forward looking tariff plan. For the Commercial category, the increase was awarded in two steps. The first increase was effective from 1st November 2010 while the second increase was effective from 1st April, 2011. The revised rates for the residential category became effective from 1 November, 2010.

4.0 Commissions Analysis

4.1 **Benchmarking:** An examination of Tariff Rates from comparable economies, in particular the Pacific Island Economies reveal that Fiji's Tariff rates, is much lower than all the other Pacific Island Countries. For example, Samoa has an average tariff rate of F\$0.59 relative to Fiji's rate of F\$0.33 per unit. Solomon's has a tariff rate of \$1.47 per unit. The country closest to Fiji is Australia with a Tariff rate of F\$0.42 (see Table 1).

Table 1: Benchmarking Electricity Tariff Data

Average Electricity Prices	Fiji cents / kWh
Fiji - current	39.40
Fiji - proposed	36.5
Australia	42.36
Palau	43.09
New Zealand	47.48
Samoa	58.75
PNG	60.12
New Caledonia	60.71
Kiribati	61.81
American Samoa	67.23
Tuvalu	69.08
Niue	83.79
Tonga	89.38
Vanuatu	93.30
Cook Islands	93.56
Solomon Islands	147.83

Source: Respective Country's Utility Regulator or Utility Institution, August, 2010.

4.2 **Cost Modeling:** Based on computations of the primary data, the unit cost of generating electricity from diesel fuel could stand at 48 cents. Taking a transmission, distribution and retail (TDR) unit costs of 13 cents, the final unit costs stands at 61 cents. With regard to hydro electricity, the unit generation cost stands at 11.5 cents. With TDR unit cost of 13 cents, the final unit cost for hydro electricity could approximate to 24.5 cents. With different ratios of hydro and diesel power, the unit electricity costs would vary. At a 60/40 hydro/diesel ratio, the electricity costs could approximate to 39.1 cents. At a 40/60 hydro/diesel ratio, the unit electricity costs could approximate to 46.4 cents. FEA in their submission computed unit cost of 40.78 cents for hydro and 59.91 cents for diesel based on a 25% return on equity.

4.3 **Renewable Energy Generation and Independent Power Producers:** The Commission in the previous determination noted that FEA is actively pursuing strategies to raise electricity generated from renewable sources; it must also provide incentive to Independent Power Producers (IPP's) to sell electricity to FEA's grid. The commission in its last determination had raised the IPP tariff rate to 23 cents. This has indeed generated lot of interest from potential investors to supply electricity to the grid. FEA in its submission to the Commission lists the following plans to increase renewable energy production in Fiji:

- (a) Wailoa (FEA) – The existing 80MW (gross) hydro power station of FEA generating about 400 GWh per year long-term average;
- (b) Nagado (FEA) – The existing 2.8 MW hydro power station, which is operationally constrained to about 1.8 MW, 18 GWh per year due to hydraulic vibration problems of its pipeline;
- (c) Wainikasou (FEA) – The existing 6 MW hydro power station, with only one unit on firm capacity and generates about 18 GWh annually;
- (d) FSC Lautoka (IPP) – The existing co-generation power station at FSC's Lautoka sugar mill, which is available for generation only during the sugar crushing season. This plan assumes that the generation output will be made available by FSC through full year by 2012 at an increased price for electricity;
- (e) Tropik Drasa (IPP) – The 9.3 MW co-generation power station which was commissioned in 2008 at Tropik Wood's Drasa timber mills;
- (f) Nadarivatu (FEA) – The 40 MW hydro power station under construction by FEA, assumed to be commissioned on 1st January 2012 for this plan, with an expected output of 101 GWh per year;
- (g) Vuda Biomass (IPP) – The 18 MW dedicated wood-fired biomass power station planned to be constructed by Pacific Renewable Energy Limited for commissioning by 1st July 2012;
- (h) Wainisavulevu (FEA) – The planned project by FEA to raise the weir structure at Wainisavulevu by 2012 to enable increased generation from the existing Wainikasou and Wailoa hydro power stations, with increased energy of 7 GWh per year but no increase in firm capacity;
- (i) Wailoa Downstream (FEA) – The planned project to build a hydro power station downstream of Wailoa, with 7 MW capacity and 35 GWh of generation per year and commissioning in 2014. Feasibility studies have been completed by JBIC and funding is being sought for its construction;
- (j) Qaliwana (FEA) – The planned project to build a hydro power station at Qaliwana in the Nadarivatu hydro power scheme, with 10 MW capacity and 43 GWh of generation per year and commissioning in 2014. Pre-feasibility studies have been completed and Expressions of Interest have been called for its preliminary design;
- (k) FSC Rarawai (IPP) – This is a new power station at FSC's Rarawai sugar mill operating on sugar bagasse during the crushing season and hog fuel during other months. Feasibility studies have been completed for a 20-25 MW power station but FSC is yet to make a decision whether to proceed with its construction. The increased tariff rate is expected to assist in a favourable decision; and,
- (l) VLIS Biomass (IPP) – This is a dedicated 10 MW wood-fired biomass power station, yet to be identified, with 5 MW in 2017 and a further 5 MW in 2018. A number of IPPs have shown interest in recent past to construct biomass and waste-to-energy power stations, provided they are paid an appropriate price for their electricity. If no IPP builds this plant, then FEA or the Fiji Government will be required to build a similar power station using either wood or some other form of energy, including imported coal.

5.0 Determination

5.1 The Commission notes that:

- a) FEA and Fiji is solely relying on Wailoa Power station , Nadarivatu Hydro Scheme and Monasavu Dam for almost all of its renewable energy that is currently being supplied;
- b) That the current renewable energy sources are grossly inadequate to supply Fiji's electricity demand;
- c) That the rising level of fuel prices is having a major impact on Fiji's foreign reserve position;
- d) That relying on fossil fuels to power Fiji's growth plan is not only economically and financially risky, but also a security issue for the nation;
- e) That it cannot approve a rate which is higher than a competitive market rate as it would affect businesses by raising their unit cost. The Commission also notes that it cannot approve a rate lower than a competitive

market rate or a rate which subsidizes the end users power bill as it will lead to misuse and wastage of resources. The Commissions determination cannot promote inefficiency in the energy sector in Fiji;

- f) That the Department of Energy should make submission to government to ban importation of energy inefficient appliances and equipment to manage the demand side;
- g) The recent commissioning of the newly built Nadarivatu Hydro scheme (40 MW), the renewable/nonrenewable energy mix now stands at 75.9%. This implies that FEA should now pass on a part of the increased returns arising from the improved renewable/nonrenewable energy mix to its shareholders, part to investment in existing infrastructure ,part to sourcing of new renewable energy sources while remaining to consumers via reduction in tariff rates.

5.2 In arriving at this determination, the Commission carefully considered:

- a) The impact it will have on Fiji's economy, in particular its reserves;
- b) The impact on the commercial sector and its competitive edge in the product market;
- c) The impact on FEA's financials and its plans to produce and supply most of its electricity requirement from renewable energy source;
- d) The impact subsidies have on resource consumption via sub-optimal resource pricing;
- e) The benefits derived by FEA from the Commissioning of the newly built Nadarivatu Hydro scheme; and
- f) The ability of Fiji to deliver on to its objective of achieving energy security and stability.

5.3 In light of the above issues the revised tariff rates to be effective from 1 January, 2013 are as per table 2 below:

Table 2: Electricity Tariff Rates Schedule.

Tariff Categories	Existing tariff rates	Revised Tariff rate	Increase / (Decrease)
<u>Domestic Category</u>			
Domestic Tariff (<=75 kWh per month) c/kWh	34.84*	33.10	(1.74)
Domestic Other Tariff (>75 kWh per month) c/kWh	34.84	33.10	(1.74)
<u>Commercial & Industrial Category</u>			
Commercial & Industrial Tariff –up to 14,999 kWh per month, c/kWh	42.00	39.90	(2.10)
Commercial & Industrial Tariff – in excess of 14,999 kWh per month, c/kWh	44.00	41.80	(2.20)
<u>Maximum Demand Tariff</u>			
<i>(1) Demand > 1000kW</i>			
Demand charge \$ per kW per month	40.20	38.19	(2.01)
Energy charge c/kWh	33.50	31.83	(1.68)
<i>(2) Demand 500 - 1000kW</i>			
Demand charge \$ per kW per month	38.50	36.57	(1.92)
Energy charge c/kWh	31.00	29.45	(1.55)
<i>(3) Demand 75 - 500kW</i>			
Demand charge \$ per kW per month	36.20	34.39	(1.81)
Energy charge c/kWh	28.50	27.07	(1.42)
For Maximum Demand and Commercial & industrial consumers who elect to take a power supply directly at the high voltage, a discount of 4% is allowed.			
Excess Reactive Energy penalty fee c/kWh	44.00	41.80	(2.20)
<i>Institution Tariff c/kWh</i>	34.84	33.10	(1.74)
<i>Street Light Tariff c/kWh</i>	34.84	33.10	(1.74)

* The customer will pay only 17.20 cents /unit and the rest will be subsidized by the government

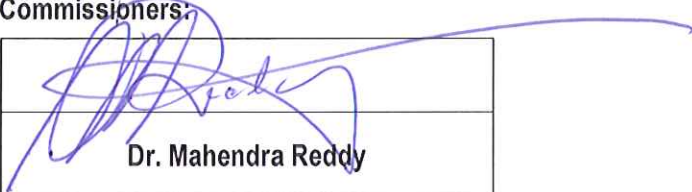
6.0 Independent Power Producers (IPP) Rates

Given that FEA's selling price has been reduced by 5%, the minimum price offered to IPP's must also be reduced by the same quantum. Therefore, **the new IPP tariff rate approved by the Commission is a minimum rate of 25.65 cents per unit**. However, FEA could consider a higher tariff rate to attract investors in high cost regions such as Vanua Levu or outer islands. This could greatly help FEA cost reduction strategies given that electricity production by FEA in some of these regions are primarily via diesel use.

7.0 Future

The Commission looks forward to Fiji generating and supplying most of its electricity requirements from renewable energy sources in the near future. In such a scenario, the owners of the capital will benefit via higher returns, the country will benefit by making saving on its import expenditure, local economy will benefit by increased economic activity via IPP's, the society in general will benefit via a cleaner environment with less pollution and the end users will also benefit by having significantly lower tariff rates. This determination's expectation is nothing less. The Commission will continuously monitor FEA's progress towards this vision.

Commissioners:


Dr. Mahendra Reddy
Chairman
11 December 2012

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