ENERGY FIJI LIMITED TARIFF REVISION SUBMISSION

1.0 OBJECTIVES OF HAVING COMMERCIAL TARIFF RATES

1.1 The objectives of setting commercial electricity tariff rates are as follows:

- Enable entry of private investors to assist in the successful implementation of the optimum 10 year Power Development Plan (PDP);
- Ensure a long-term reliable and continuous power supply to Fiji to eliminate power supply shortages and power outages;
- Enable EFL to meet its debt covenants imposed by Lenders, hence providing comfort to the Fijian Government as the sovereign guarantor for some of EFL's borrowings. Meeting the debt covenants will also result in Lenders not calling on securities such as debenture mortgage over the assets of EFL for loans that are secured via debenture mortgage;
- Enable EFL to maintain its gearing ratio (debt/debt+equity) below the maximum target level of 45% when it borrows annually to fund its Power Development Plan;
- Improve EFL's credit ratings in the international market if it has to borrow from offshore to fund major renewable energy projects in Fiji
- Assist RBF to achieve its target to reduce Fiji's fuel import bills, in order to improve Fiji's foreign exchange reserve position;
- Minimize the potential requirement for the Fijian Government to inject additional equity capital to EFL as a last resort in the event EFL fails to pay the loans on time due to weak cash flows;
- Strengthen its risk mitigations towards natural disasters such as damaging cyclones, severe droughts and earthquakes;
- Promote energy efficiency by sending the correct market signals
- Retain competitive electricity tariff rates in the Pacific Region, including Australia and New Zealand.

2.0 BASIS OF THE PROPOSED ELECTRICITY TARIFF RATES

2.1 In order for private investors to enter Fiji's electricity generation industry, a robust regulatory regime needs to be established that will provide these investors fair opportunity as well as the confidence of investing in the energy industry particularly the power generation sector where a lot of investment is required in future;

2.2 The regular review of the electricity tariff is essential so that it keeps abreast with inflation and reflects the true cost of the operator/investor and ensures that the investor/operator earn a decent return on their investment. In the absence of a regulatory regime to enforce or regulate the regular review of the electricity tariff rate, this can create an environment of uncertainty and can jeopardize pipeline energy projects, particularly that the investment in the energy sector is always on long term basis;

2.3 We endorse that the regulatory regime will need to carry out a review of the electricity tariff rates every four (4) years. This is important from an investor perspective as well as the financial sustainability of the industry.

2.4 EFL endorses the methodology of determining the electricity tariff adopted by ADB as follows:

2.4.1 **Fuel Component**-There will be a pass through component of the tariff similar to a fuel surcharge mechanism. The review period for the pass through of the fuel component of the tariff is every 6 months. Fuel costs fluctuate from month to month depending on international fuel prices, hydrology, and IPP outputs and are largely outside of the EFL's control.

2.4.2 **Non Fuel Component**- This tariff rate covers for the normal OPEX of EFL, all repairs and maintenance, capex plan of EFL and provides a return on investment. This will be fixed and reviewed every 4 years.

2.4.3 **Self Insurance or Natural Disaster Compensation**- To mitigate the adverse impact of natural disasters (unforeseen events outside the control of EFL) and subsequent provision of electricity services, EFL shall hold reserves as self-insurance fund..

2.5 EFL has been absorbing unbudgeted costs which are outside of its control relating to natural disasters over the years. These costs are not passed through to customers and are not insured by EFL such as the entire power line networks in Fiji which is prone to adverse weather conditions such as cyclones, flooding, tsunami or earthquake. In the last 5 years, EFL has incurred two major catastrophic events as follows:

i) **2014 Prolonged Spell of Dry Weather**-EFL was forced to implement its contingency plan of purchasing, installing and commissioning 40MW of containerized diesel gensets around Viti Levu at a cost of $35M. EFL had to borrow this money from ANZ Bank at an interest rate of 2.7% p.a. fixed for 3 years to fund the purchase, installation and commissioning of the 40MW additional diesel gen set. EFL considered that this option is the lower of the two evils in terms of economic and cost implications. The second evil was Monasavu Hydro Electric Project closing down due to water level reaching critical level as a result of very low rainfall and there are brown-outs across Viti Levu. As a result of EFL installing the additional diesel capacity of 40MW from August 2014, it incurred an unprecedented fuel cost of $180M in 2014 which was $57M more than 2013. This unbudgeted cost was not passed through to customers but was absorb by EFL. Despite this setback, EFL managed to achieve a profit of $1M in 2014. Further, as a result of implementing this contingency plan, EFL had to obtain a 6-month moratorium from ANZ Bank to defer loan principal repayments from August 2014 to January 2015. This deferred loan repayments for 2014 were repaid together with the loan principal repayments for 2015.

ii) **TC Winston in 2016**-As a result of this category 5 cyclone which caused havoc throughout Fiji, EFL incurred a total cost of around $32M to repair damages to the power network infrastructures and restore power supply to the affected areas in Fiji. This cost was not passed through to customers and neither the power line network is insured as practically no insurance company insures the power lines and if they do, the premium will be exorbitant. Four (4) high voltage 132kV Transmission Towers were also damaged and were replaced with temporary towers. The replacement of these towers will be carried out in 2019 at an estimated cost of around $4M, which is not part of the $32M already incurred in 2016.

Below is the cost incurred by EFL over the last 5 years for repair damages to the power system as a result of natural disasters as well as the additional fuel cost incurred in 2014 as a result of a severe drought:

	2012	2014	2016	2017	2018	Average
Cyclone & Flooding Cost	6,327,000	169,169.15	32,225,945.35	1,066,560.73	2,019,643.19	
Prolonged Drought		57,426,019.00				
Total	6,327,000	57,595,188	32,225,945	1,066,561	2,019,643	19,846,867

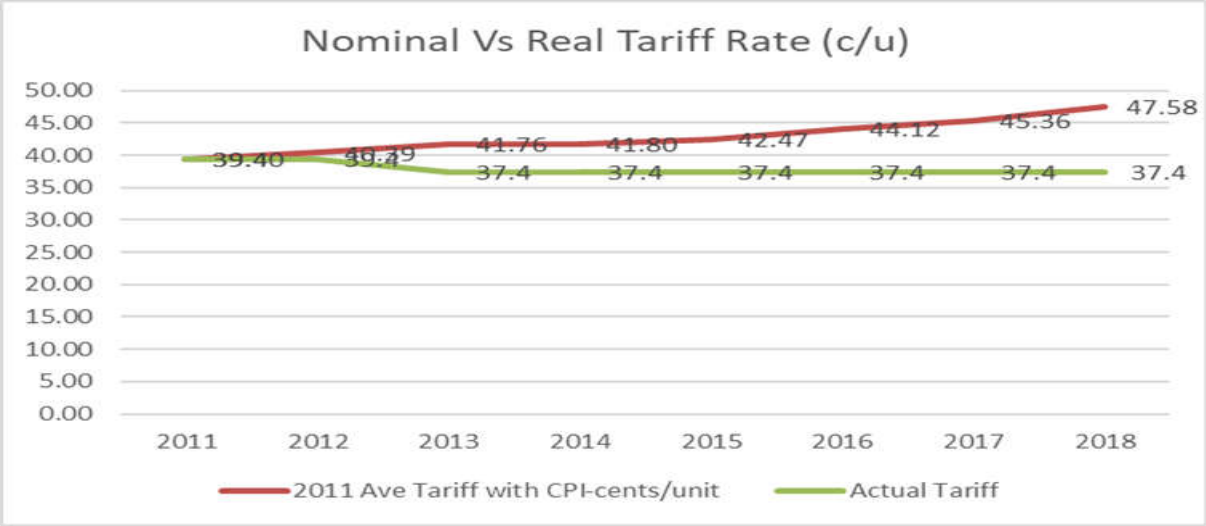
2.6 The above tariff methodology which will be part of the regulatory regime and will ensure that investors/operators business is protected against uncontrollable events which are outside their control. This will ensure that the investors/operators future earnings are somewhat protected. Without this protection, a single hit such as a category 5 cyclone can turn the company insolvent and this can become a catastrophic event for Fiji. Therefore, establishing a robust regulatory regime is essential to ensure the financial sustainability of the investor/operator and provides security to the Fiji economy.

3.0 EFL's FINANCIAL PERFORMANCE UNDER THE CURRENT TARIFF STRUCTURE

3.1 The Fijian Government approved an increase to the average electricity tariff rates to the commercial level of 39.4 c/u (VEP), based on comprehensive tariff review conducted by EFL in 2010. The tariff increase was implemented in three phases, in June 2010, October 2010 and then in early 2011. However, the Government in the 2012 national budget announced that EFL to reduce the electricity tariff rates across all customer categories by 5% with effect from 1st January 2013. This decreased the electricity tariff rate to the current level of around 37.43 c/u (VEP). The impact was a reduction in the EFL revenue by approximately $16M to $18M per annum. Energy Fiji Limited have been applying this average electricity tariff rate of around 37.43 c/u (VEP) for more than six (6) years. The loss in revenue over this period is estimated to be around $100M.

3.2 The tariff structure approved by the FCCC to be implemented from 1st January 2013 has been used as the basis for this review.

3.3 If Inflation is to be factored on the average electricity tariff rate of 39.4 c/u approved by FCCC in 2011, then the real electricity tariff rate would be around 48 c/u as at the end of 2018.



This shows that the buying power of the EFL's tariff has been eroded by inflation over the last 6-7 years. This sets the benchmark for any revision to the electricity tariff rate. In real term, the electricity tariff rate has increased by around 21% since 2014. The proposed nominal tariff increase proposed by EFL is around 44.33 c/u (VEP), which is still lower than the 47.58 c/u based on inflation.

3.4 Key drivers of EFL's financial performance are:

- Establishing a robust regulatory regime – whether the current average electricity price of 37.4 Fiji cents per kWh is adequate to cover for all EFL's cost and earn a decent return to the shareholder?
- Water inflows to the Monasavu and Nadarivatu Hydro Dams, which could fluctuate widely on a yearly basis and impact the cost of thermal generation required.
- Prices of Industrial Diesel Oil (IDO) and Heavy Fuel Oil (HFO), which are extremely volatile and are very hard to forecast, due to their dependence on many external influences such as global politics, global economics and natural disasters.
- The level of capital expenditure, which drives the level of borrowings because surplus cash flows from operations alone are inadequate to fully fund EFL's capital expenditure

requirements. EFL is expected to spend around $160M per annum on capex to ensure it successfully implements its 10 year Power Development Plan. Substantial borrowings will be required to fund this capex plan of EFL.

- The level of electricity growth in the country, which will require power generation and power network infrastructures to be developed in a timely manner.

3.5 Since EFL is a highly capital-intensive industry, borrowings to fund these capital infrastructures is inevitable. EFL's actual borrowing profile over the last 9 years is shown below together with projections to fund its 10 year Power Development Plan:

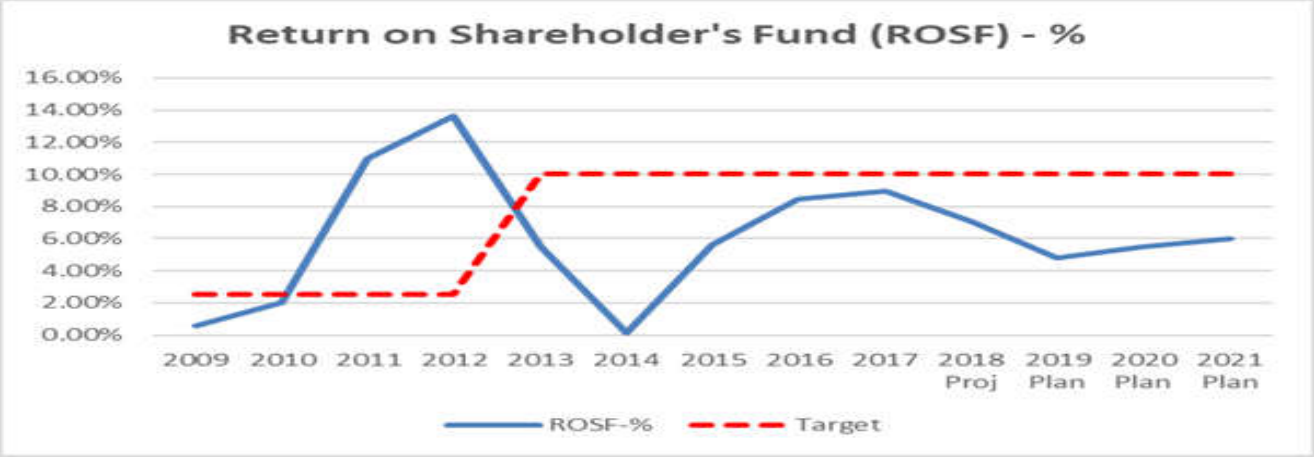
As shown above, it will not be financially sustainable for EFL to fund the entire PDP as it will breach the gearing level set for the industry of not more than 45%. Also the debt level will be exorbitant exceeding $1.5 Billion by 2026 and will not be manageable under the current tariff structure in terms of loan repayments over 10-15 years.

3.6 Any borrowings undertaken by EFL for capital projects will require that EFL meet certain specified debt covenants. Therefore, it is important to limit EFL's Gearing ratio (defined as Debt divided by Debt plus Equity) to less than 45%, which is the high end of gearing ratios for similar overseas utilities. EFL's debt covenants signed with lenders are tabulated below which are reviewed annually based on EFL's financial performance:

A) FNPF	Covenant	Formula	Target
1	Interest Cover Ratio	EBITDA	Min 1.5
		Net Interest	
2	Tangible Net Worth	Total Assets	Positive
		Total Liabilities	
B) ANZ Bank	**Covenant**	**Formula**	**Target**
1	Debt to EBITDA	Debt	Less than 5 times
		EBITDA	
2	Gearing	Total Liabilities	Less than 125%
		Total Equity	
3	Debt Service Cover Ratio	EBITDA	Minimum 1.2 times
		Annual Debt	

The key variable widely used in the covenant calculation is EFL's EBITDA (operating profits) which is driven by EFL's tariff structure. If the tariff structure is set too low this will result in a lower EBITDA and hence could result in the breach of the debt covenants. The second key variable in the covenant calculations is the total debt and financing cost of EFL. EFL will only reduce the amount it borrows and likewise the financing cost associated with this borrowing if it generates surplus cash. This will only be made possible if the right commercial tariff is implemented.

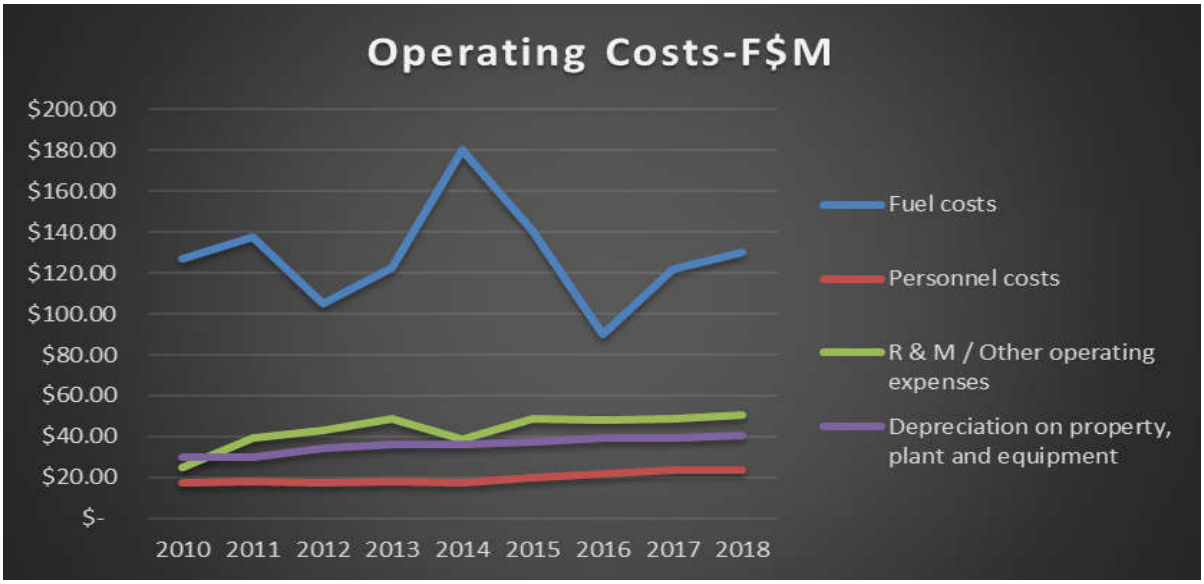
3.7 EFL's return on shareholder fund (ROSF) has been low and is projected to be below the Government's target if the prevailing average electricity tariff rate of 37.43 c/u (VEP) continues to remain and is not revised upward. EFL achieved the ROSF of 10% set by Government only once in 2012 when the average electricity tariff rate was 39.4 c/u (VEP). The tariff was later reduced by 5% to 37.43 c/u (VEP). The projected ROSF if this electricity tariff continues is shown in the graph below:



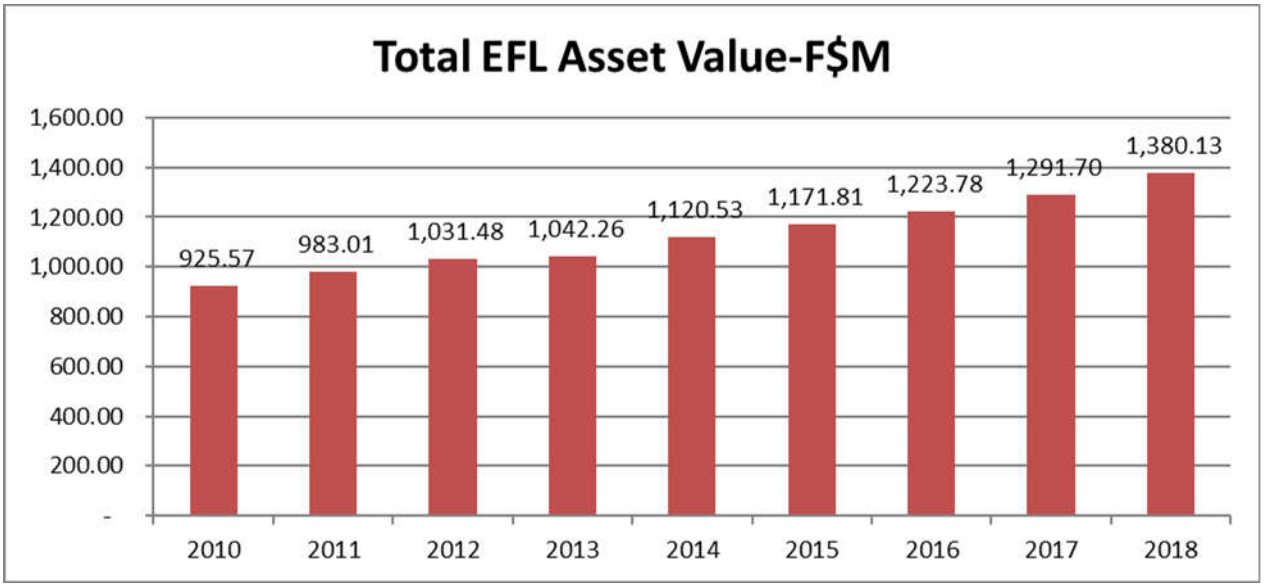
It is clearly shown from the above graph that the prevailing tariff structure based on an average electricity tariff rate of 37.4 c/u (VEP) is not sufficient to earn a decent return to the shareholder.

3.8 EFL's largest cost base is its fuel cost, which is on average around $120M for a normal year. The fuel cost is driven by three uncontrollable factors such as the global fuel prices (IDO & HFO), foreign exchange rate, particularly the US Dollar and the amount of rainfall received at the Monasavu and Nadarivatu Hydro Dams which determine the volume and cost of fuel. While EFL

has introduced its fuel and foreign currency hedging programme in 2018 to mitigate any volatility, the risk and exposures are still prevalent and cannot be eliminated altogether. Having the fuel - pass through mechanism, will to some extent mitigate any volatility on the fuel cost and future earnings of EFL.



EFL's second largest cost is the operations and maintenance (O&M) of its tangible assets. Over the years the total asset base of EFL has grown to unprecedented levels as shown below:



These assets need to undergo periodic inspection and maintenance to ensure that they are up to the required standards of operations to ensure the reliability and security of power supply to customers. EFL is very mindful of the downtime of electricity and its impact on the economic gross domestic product (GDP) of the country. It is a known fact that as the asset base grows, the operation & maintenance aspects relating to these assets also increase as they are closely correlated. EFL have an asset base of around $925M in 2010 when the last tariff increase was approved averaging 39.4 c/u (VEP) which later was reduced by 5% to 37.43 c/u effective from 1st January 2013. The asset base grew to around $1.4 Billion in 2018 (increased by around 50% as compared to 2010) and yet the electricity tariff rate was reduced in 2013 and remained fixed at 37.4 c/u (VEP) from 2013 todate. In terms of actual maintenance cost, EFL spent around $25M in 2010 and this number doubled in 2018 where it spend $50 million. To ensure that the industry is

financial sustainable, asset maintenance needs to be reflected appropriately in a tariff setting framework.

Because of the high asset base that EFL carries in its book, obviously the depreciation cost will also be high. This is a good indicator as it shows the age of the asset and when these assets needs to be replaced or have to undergo major refurbishment. Because of the high depreciation cost incurred by EFL annually, estimated to be around $40M, this requires that the organization replaces assets to the tune of $40M per annum over and above its normal capex of around $160M. This is not a sustainable model as the current tariff structure is inadequate to cover for huge capex spending.

Finally, under this section, the EFL employee cost have also shown a direct correlation with the increase in asset base. Since the asset needs to be maintained to meet certain operational standards, human capital/manpower have to be recruited in a timely manner to carry out periodic inspections and maintenance of these assets. The table below shows the head count of employees against the EFL asset base:

Staff Number	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total EFL Asset Value-F$M	925.57	983.01	1,031.48	1,042.26	1,120.53	1,171.81	1,223.78	1,291.70	1,380.13
Staff Number	673	661	703	736	703	725	756	772	805
Asset per staff-$M	1.38	1.49	1.47	1.42	1.59	1.62	1.62	1.67	1.71

The asset base has increased by almost 50% from 2010 to 2018, however, the total employee has increased by around 20% only. The reason for the low percentage of increase in employee count as compared to the asset base is mainly to do with the tariff structure in place in EFL. Asset maintenance is critical but has to be prioritized due to lack of funding. Also as shown above the ratio of manpower to the regulated asset base has increased substantially.

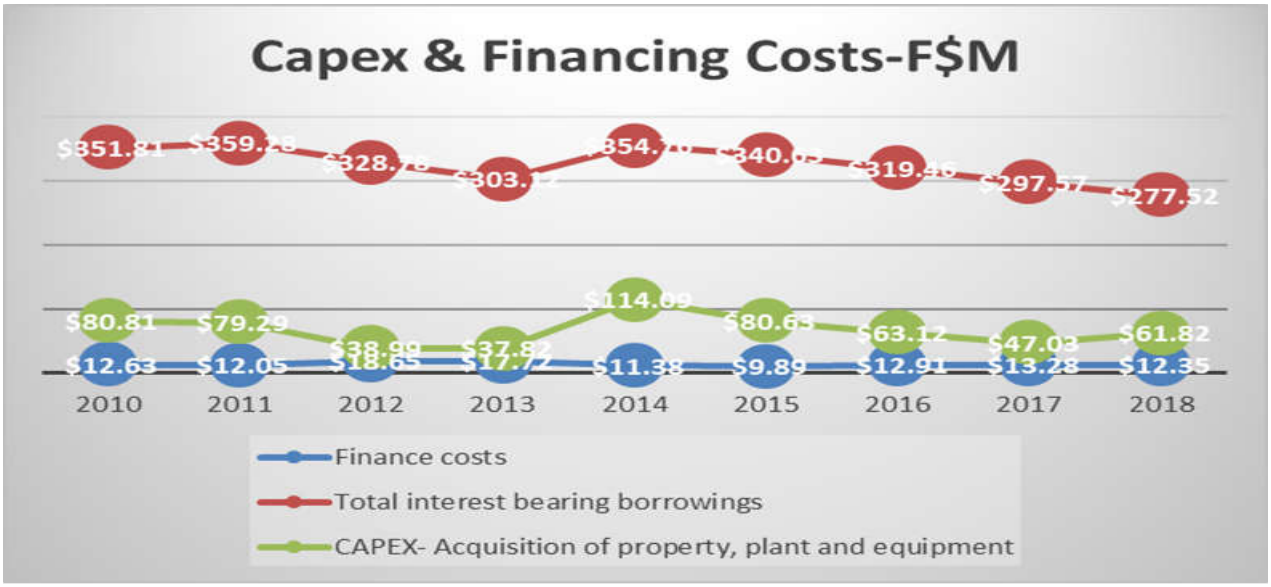
Further, we have noticed the impact of liberalizing the labor force in Fiji and this has greatly impacted the cost of labour. Government for example has set the pace in trying to lure the best person for the job. As a result this has lifted the remuneration scale in the labour market, from the clerical jobs to the high demanding manager jobs. This has affected EFL as we have been managing our employee cost diligently. In the process, we have lost good employees over the last 2-3 years within the Fiji market apart from those who migrate overseas for greener pastures. This is one reason the employee cost has gradually increased apart from the gradual increase in number of employees over the years and the increase in salaries for the contracted employees within EFL to retain them. Since EFL is a very specialized and highly technical organization, labour mobility can become a real concern if the cost of recruiting the labor force is not addressed appropriately from a tariff setting point of view.

3.9 Due to nature of EFL's business that it is a highly capital-intensive industry, investing in the development of power infrastructure will be ongoing as demand of electricity increases day by day. Electricity has been growing at an average of 4% per annum from 2013 to 2018 as shown below:

	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average
Electricity Sold-Units	764,232,031	740,873,989	731,631,797	780,072,880	794,871,587	826,112,413	841,833,760	902,070,668	937,095,324	
Growth Rate (%)		-3.1%	-1.2%	6.6%	1.9%	3.9%	1.9%	7.2%	3.9%	4%

The growth in electricity is largely driven by the existing/new commercial/industrial developments and Government's rural electrification programme.

To keep up with the pace of development in Fiji, electricity plays a very significant role. One could say that it is the backbone of national development. Under EFL's 10 year Power Development Plan that was prepared in 2017, the energy sector will require a total investment to the tune of $2.5 Billion to facilitate power development based on an electricity growth rate of 4%. If EFL has to implement the entire Power Development Plan over 10 years, this means that EFL will have to spend $250M every year on capex. Given the restriction of the current tariff structure, EFL has managed to spend on average $70M per annum over the last 9 years as shown below:



The prime objective of any funding model is to ensure that the existing debts are repaid first, before any surplus cash is allocated for capex spending. This has always been EFL's funding model. While it has brought down its debt level significantly by around $80M as compared to 2011, this does not mean that tariff levels must come down, since the reduction in debt level is to prepare EFL venture into its next bigger renewable energy project such as the development of the Qaliwana/Upper Wailoa Diversion Hydro project (costing around US$250M) or the development of a redundant 132kV Transmission Line from Wailoa/Nadarivatu to Sigatoka (costing around US$100M).

3.10 To date, the EFL power system comprises of 9,130km of transmission and distribution network, 15 power stations and 25 zone substations and switchyards. EFL's major installations are getting old with average usage between 25 and 30 years or more. Some equipment is already out of production (obsolete) and not available anymore where no spare parts can be delivered. The 6.6kV underground cable in Suva central has reached its 'end-of-life' phase. Therefore, maintenance will be more expensive than replacement. In order to meet the organization's strategic objectives these aging assets must be replaced to comply with safety, reliability and security requirements. To manage the aging assets, it is essential to invest in the upgrading of the infrastructure to avoid any risks associated with security, reliability, performance, quality, health, safety and environmental issues. The total estimated cost of replacing these ageing assets is around $150M. These ageing assets were supposed to have been refurbished/replaced prior to 2010 but due to the lower electricity tariff prevailing then, it was difficult to generate the surplus cash and neither obtain borrowings from commercial banks to fund these ageing assets. EFL plans to fund this exercise internally using its surplus cash over a period of 6-8 years.

3.11 The Monasavu Hydro Scheme has been in operation for more than 35 years. The scheme was established in 1983 and was required to undergo mandatory refurbishment exercise in 2008, 25 years after it has been in service to maintain the standard, quality, safety and performance of the

hydro Power Station. This did not eventuate, again due to the low electricity tariff prevailing in 2008. The refurbishment work was deferred and EFL commenced with this exercise in 2013 after the Nadarivatu Hydro Project was commissioned in 2012. The Monasavu hydro is considered a strategic asset for Fiji as it meets bulk of the daily base load for Viti Levu throughout the year, where most of the economic activities in Fiji takes place.

The Monasavu half-life refurbishment work is essential and has to be carried out by EFL to ensure that the Monasavu Hydro scheme continues to operate effectively and efficiently over the next 25 to 30 years. The entire refurbishment exercise is estimated to cost EFL some $120M and is envisaged to be completed by 2022. The exercise is currently funded from EFL's internal cash flows spread over a period of ten (10) years as the current tariff level is inadequate to expedite the repair works and bring the plant up to standard. However, an advantage with EFL funding this work internally from its own cash flow is that no borrowings will be required; therefore nil interest costs to EFL and no Government Guarantee will be required.

4 IMPLICATIONS OF A NON-COMMERCIAL TARIFF ON PRIVATE INVESTORS

4.1 The extremely low electricity tariff rates in Fiji (lowest in the Pacific countries including some parts of Australia and New Zealand) is the real reason for the lack of entry of private investors and IPPs into Fiji's electricity generation industry. It is rather a fact that Investors choose to invest in countries where the electricity tariff is high since they will get better returns. This is one disadvantage of setting tariff structure too low.

4.2 No IPP or private investor will be prepared to invest their own funds in a venture that will lose money.

4.3 EFL has, in recent years, signed Power Purchase Agreements (PPAs) with new potential IPPs such as Pacific Renewable Energy Development Ltd of New Zealand who could not get a financial close to their funding for their project. We suspect that the PPA was not a bankable document given the low IPP feed-in-tariff offered by EFL which was based on a low electricity tariff rate;

4.4 Further, EFL has managed to sign two more PPAs, one with Nabou Green Energy Limited for the development of a 12MW biomass plant and Hydro VL Pte Ltd for the development of three (3) run of the river hydros at Namosi with an installed capacity of 32MW.

4.5 Therefore, NGEL and Hydro VL Pte Ltd have shown that if the right commercial electricity tariff rate is implemented by the regulator which incorporates a return on the investment made by the private sector then the development of renewable energy and meeting the energy targets set by EFL and Government is something that can be achieved.

5 IMPLICATIONS OF A NON-COMMERCIAL TARIFF ON EFL AND THE FIJI GOVERNMENT

5.1 Under the present Electricity Tariff structure, EFL cannot earn a decent return to the shareholder and provide them with annual dividends. This has been the case as EFL is too capital intensive requiring substantial funding for its capital projects.

5.2 If private investors or IPPs do not contribute towards building new power plants, then EFL will have to take sole responsibility to build sufficient power plants in a timely manner to enable meeting the forecasted demand for electricity and avoid power supply shortages. This will increase EFL's total capital expenditure requirement over the period 2019 to 2026 to around $2.5 billion . This will result in even higher gearing ratio levels for EFL, exceeding the permissible limits.

5.3 The impacts of high gearing levels will flow through to the debt covenants imposed by FNPF and ANZ banks. According to the signed loan facility agreement, EFL to pay back the outstanding loan amounts immediately if the debt covenants are breached.

5.4 The reduction in EFL's cash flows from operations would also be substantial such that EFL will find it very difficult to fund its renewable energy development program, which is essential to reduce Fiji's exposure on the high-cost of imported thermal fuel for electricity generation. This will hinder the Reserve Bank of Fiji's objective to reduce Fiji's import energy bill. In addition, EFL will not be able to construct the second 132kV transmission line, which is considered to be essential if the full benefit of the Lower Ba and Qaliwana/Upper Wailoa Diversion Hydro power projects is to be achieved. It is also very important that the half-life refurbishment of the existing Monasavu hydro Electric Scheme is carried out as planned because the power station is now more than 35 years old and any unplanned outages will have severe adverse effects on the cost of operations, reliability, continuity and quality of power supply in Viti Levu. The Monasavu Hydro Electric Scheme meets the daily base load of Viti Levu for 24 hours, 365 days.

5.5 Some of EFL's borrowings are backed by sovereign guarantees from the Fijian Government. Any failure to pay the loans on time due to weak cash flows will put the Fijian Government at risk. In the past, EFL has never defaulted on its principal loan re-payments or on interest payments as this has been taken as a priority from its surplus cash except for in 2014 due to a severe drought.

5.6 In the worst case, the Fiji Government, as EFL's shareholder, may be required to inject additional equity into EFL to boost the weak cash flows. Given the Government's other objectives based on social and economic policies, it is considered inappropriate for the Government to inject equity into the electricity industry. Instead, the "User Pays" concept is the most appropriate and must be followed.

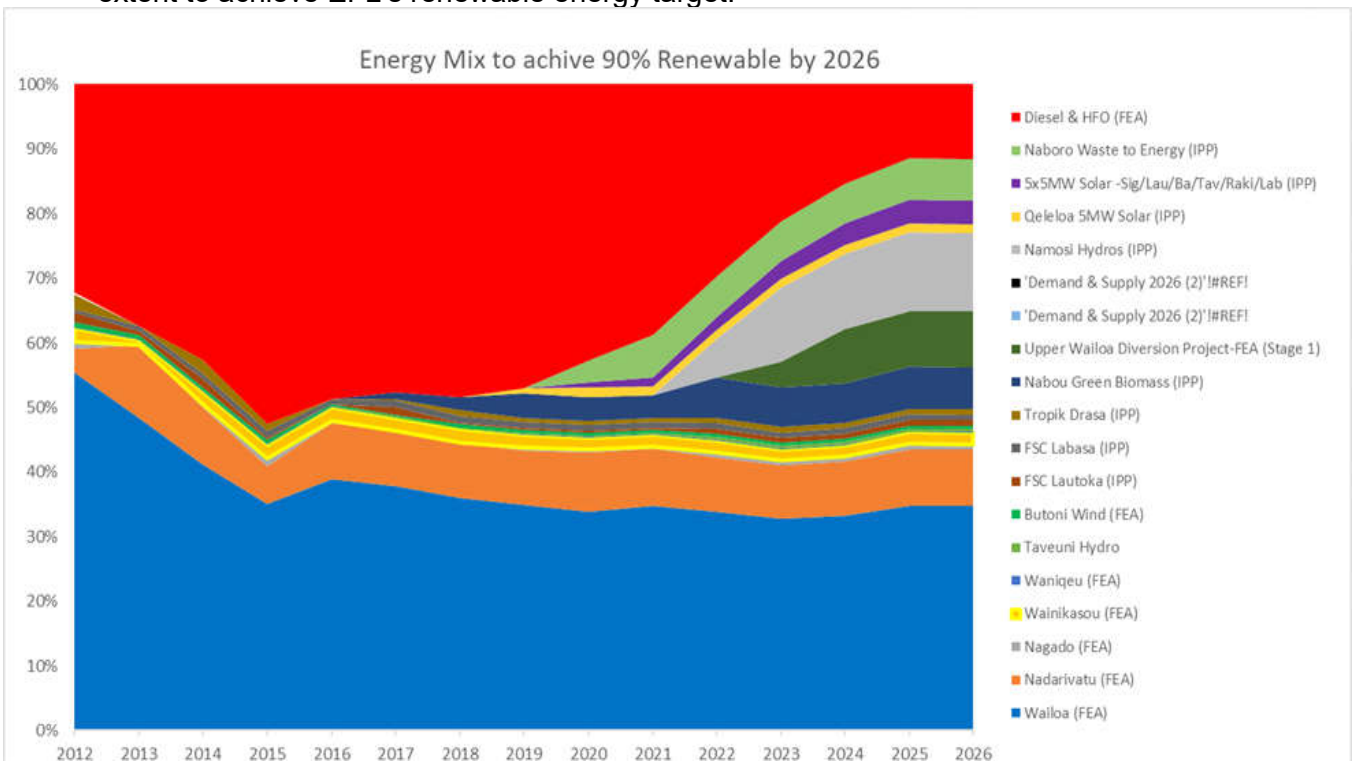
5.7 Therefore, it is important that the Government and EFL encourage private investors to enter the electricity power generation industry by appropriately matching the retail electricity tariff rates against the commercial IPP entry costs. The Government must also ensure that EFL operates as a self-financing company with commercial financial outcomes and earn appropriate return to the shareholder. The establishment of a commercial tariff structure is the key to achieving this outcome.

6 SUCCESSFUL IMPLEMENTATION OF EFL'S 10 YEAR POWER DEVELOPMENT PLAN

6.1 In May 2017, EFL completed a review of its 10 year Power Development Plan (PDP) up to 2026. The ten (10) year Power Development Plan (PDP) covers master development plan to improve all elements of the power systems in Fiji and to ensure adequate and efficient power supply at reasonable cost. The plan looks at the load forecast based on the forecasted result to prepare generation plan and network plan to meet the demand for Viti Levu, Vanua Levu, Taveuni and the Ovalau Power Systems.

6.2 The total investment required in the power sector to meet the demand of electricity till 2026 is around $2.5 Billion. The total investment required in the transmission and distribution system is estimated to be around $870 million for both the Viti levu and Vanua Levu power network systems. These investments to reinforce the power network system is expected to be funded solely by EFL on its own as typically there is no economic return from such investments and the reason why the private sector do not invest in the Transmission and Distribution power systems as generally they are not economically attractive. The investments in the power network systems are essential as they ensure that the energy generated from the new power generation sources, developed either by EFL or the IPPs are successfully evacuated to the load centres to meet the growing demand of electricity and assist Government to grow Fiji's economy. It will be a huge challenge for EFL to successfully implement its Power Development Plan up to 2026 particularly investing heavily in reinforcing the power network infrastructures at the prevailing low electricity tariff rate. The private sector is expected to invest substantially in the power generation sector in the form of Independent Power Producers (IPPs) which is estimated to cost some $1.08 Billion over the next 10 years.

6.3 The optimum power generation development plan is shown below. EFL's renewable energy target of producing at least 90% of the required Fiji-wide generation through renewable resources has been used when developing the supply and demand balance. As far as Vanua Levu is concerned the possible sources of renewable energy are solar or biomass and we are expecting IPPs to invest in these projects. As far as Ovalau is concerned solar/wind power may turn out to be a possibility, however, solar/wind power on its own cannot cater for the daily peak demand presently. In the case of Taveuni, there is potential for Solar on the island. Till the IPPs develop these projects in Vanua Levu, Ovalau and Taveuni, Viti Levu will need to compensate to some extent to achieve EFL's renewable energy target.



TOTAL FIJI GENERATION	Actual	Actual	Actual	Actual	Actual	Actual	Proj	Plan	Plan	Plan	Plan	Plan	Plan	Plan	Plan
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Total generation required (GWh)	839.1	869.7	891.426	913.813	934.76	1007.71	1,031.12	1,072.36	1,115.26	1,159.87	1,194.66	1,230.50	1,267.42	1,305.44	1,344.61
Made up of (GWh):															
Wailoa (FEA)	466.77	420.20	314.34	320.88	384.45	381.53	371.00	375.00	375.00	401.00	401.00	401.00	401.00	401.00	401.00
Nadarivatu (FEA)	29.89	98.60	67.54	52.97	85.76	86.07	89.26	90.00	101.00	101.00	101.00	101.00	101.00	101.00	101.00
Nagado (FEA)	8.86	0.61	3.08	11.36	3.30	-	-	5.00	5.00	5.00	9.20	9.20	9.20	9.20	9.20
Wainikasou (FEA)	18.72	5.94	15.03	19.90	21.26	20.19	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00	21.00
Waniqeu (FEA)	1.03	2.06	0.98	0.83	0.67	0.45	0.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Taveuni Hydro						2.23	2.00	2.00	2.00	2.00	5.20	5.20	5.20	5.20	5.20
Butoni Wind (FEA)	6.80	5.35	4.27	5.66	3.63	2.08	5.00	5.00	5.00	5.00	5.30	5.30	5.30	5.30	5.30
FSC Lautoka (IPP)	12.00	5.67	10.02	3.20	0.06	11.70	3.00	3.00	3.00	3.00	10.00	10.00	10.00	10.00	10.00
FSC Labasa (IPP)	5.00	6.53	6.17	9.22	7.49	11.69	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Tropik Drasa (IPP)	18.80	-	15.96	9.38	0.13	1.69	10.00	7.00	7.00	7.00	10.00	10.00	10.00	10.00	10.00
Nabou Green Biomass (IPP)	-	-	-	-	-	9.32	20.00	40.88	40.88	40.88	74.46	74.46	74.46	74.46	74.46
Upper Wailoa Diversion Project-FEA (Stage 1)									-	-	-	50.00	100.00	100.00	100.00
Qaliwana Catchment-FEA (Stage 2)													53.50	107.90	107.90
Namosi Hydros (IPP)										-	70.00	140.00	140.00	140.00	140.00
Qeleloa 5MW Solar (IPP)	-	-	-	-			-	8.21	16.42	16.42	16.42	16.42	16.42	16.42	16.42
5x5MW Solar -Sig/Lau/Ba/Tav/Raki/Lab (IPP)	-	-	-	-			-	-	8.21	16.42	24.63	32.84	41.05	41.05	41.05
Taveuni/Ovalau Solar (IPP)									8.21	8.21	8.21	8.21	8.21	8.21	8.21
Naboro Waste to Energy (IPP)	-	-	-	-			-	-	37.23	74.46	74.46	74.46	74.46	74.46	74.46
Other IPPs/Lower Ba (FEA)														37.00	74.00
Diesel & HFO (FEA)	**271.28**	**324.755**	**324.755**	**480.42**	**480.42**	**480.77**	**499.36**	**503.77**	**473.81**	**446.98**	**352.28**	**259.91**	**185.12**	**131.74**	**133.90**
Renewable energy	567.82	544.945	566.671	433.391	454.338	526.94	531.76	568.59	641.45	712.89	842.38	970.59	1,082.30	1,173.70	1,210.70
Non Renewable Energy	271.28	324.755	324.755	480.422	480.422	480.77	499.36	503.77	473.81	446.98	352.28	259.91	185.12	131.74	133.90
Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Proportion of non renewable energy	32%	37%	36%	53%	51%	48%	48%	47%	42%	39%	29%	21%	15%	10%	10%
Proportion of renewable energy	68%	63%	64%	47%	49%	52%	52%	53%	58%	61%	71%	79%	85%	90%	90%

6.4 The earliest practical date for the achievement of the 90% renewable energy target is now considered to be about 2026. This date could be advanced by probably 1 to 2 years if IPP participation could be achieved immediately, especially the three hydro projects at Namosi, the solar developments around Viti Levu, Ovalau and Taveuni, and EFL makes the final decision to construct the hydro power stations at Qaliwana/ Upper Wailoa Diversion and Lower Ba by the end of 2020.

6.5 Successful achievement of the renewable energy development plan hinges on the immediate participation of the private sector and IPPs in the electricity generation industry. The renewable power developments included in this plan have long lead times. Any delay in the planned commissioning dates will also delay the achievement of EFL's renewable energy target.

6.6 The total investment required for power generation projects up to 2026 is F$1.58 Billion, made up of EFL Capex F$500 million and IPP Capex F$1.08 Billion. This assumes that EFL will develop the Qaliwana/Upper Wailoa Diversion Hydro project.

6.7 The Total investment required for transmission, distribution and retail projects up to 2026 is F$870 million.

6.8 The combined capital investment required for generation, transmission, distribution and retail projects up to 2026 is F$1.37 billion, as shown below

EFL generation plan	= F$500 million
EFL T/D/R plan	= F$870 million
Total EFL	**= F$1.37 billion**
IPP generation plan	= F$1.08 billion
TOTAL EFL and IPP CAPEX	**= F$2.45 billion**

7 BENEFITS FROM SETTING COMMERCIAL ELECTRICITY TARIFF RATE

7.1 The following benefits are expected to be derived from the setting of commercial electricity tariff rate:

- IPP entry into the generation industry will be enhanced and assist EFL to successfully implement the optimum power development plan and achieve its renewable energy target.
- It will ensure a long-term reliable and continuous power supply to Fiji.
- It will assist RBF to achieve its target to reduce Fiji's fuel import bill, in order to improve Fiji's foreign exchange reserve position
- It will enable EFL to meet its debt covenants signed with lenders, hence providing comfort to the Fijian Government as the sovereign guarantor for some of EFL's borrowings.
- It will send the correct market signals to all electricity users to conserve electricity and hence incentivize them to reduce their electricity consumption through efficient and effective use of electricity, which will help the Government's and EFL's initiatives on Demand Side Management.

8 PROPOSED ELECTRICITY TARIFF RATES

8.1 ADB has proposed to revise the electricity tariff structure of EFL as follows based on:

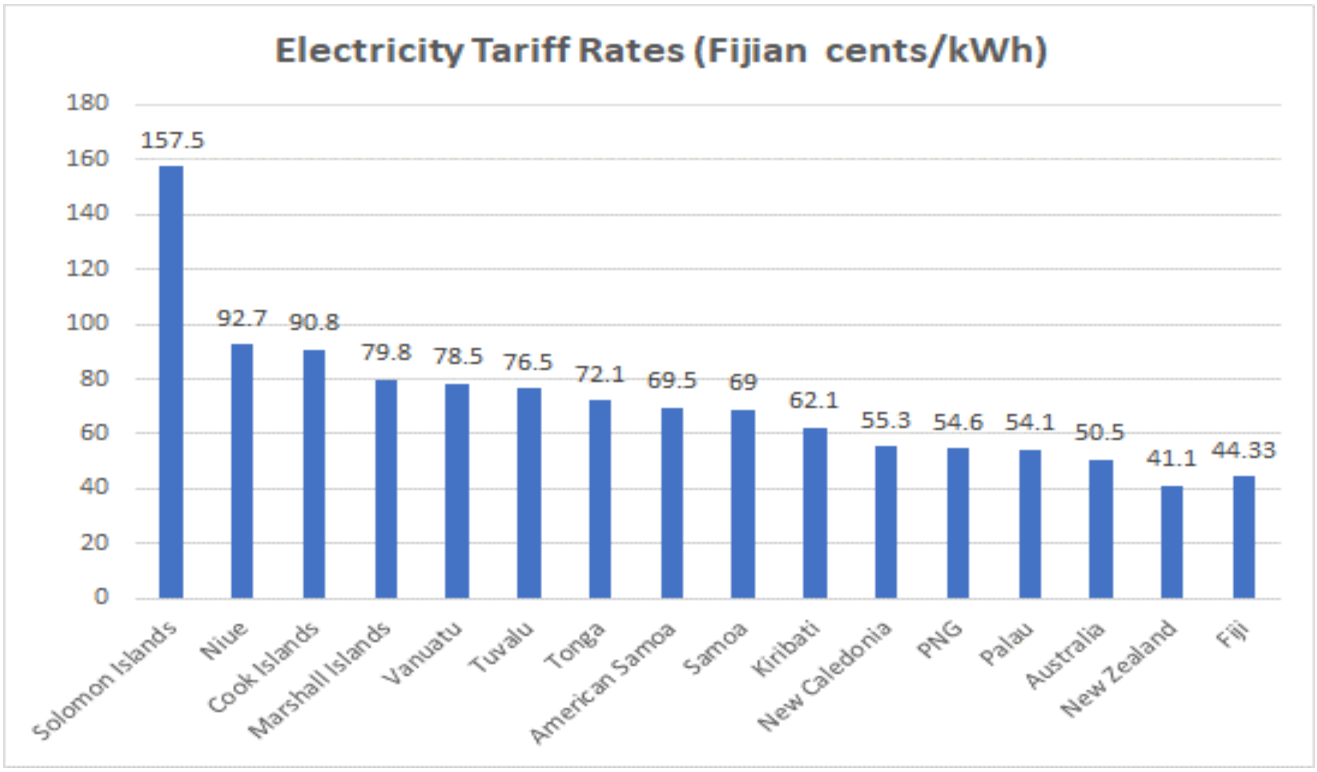
i) **Fuel Component.** There will be a pass through component of the tariff similar to a fuel surcharge mechanism. The review period for the pass through of the fuel component of the tariff is every 6 months;

ii) **Non-Fuel Component.** The non-fuel component of the tariff is fixed and will be reviewed every 4 years. This tariff covers for the normal OPEX of EFL, all repairs and maintenance, capex plan of EFL and return on investment.

iii) **Self-Insurance Tariff for Natural Disasters.** The self insurance fund is to cover EFL from any natural disasters which is unforeseen events outside the control of EFL.

8.2 The overall increase in tariff is around 17.27% over the existing average electricity rate of 37.8 c/u (VEP) as at 2018.

8.3 Despite this increase the proposed average electricity price still remains competitive against other Pacific Countries including some parts of Australia & New Zealand, as shown below.


Electricity Tariff Rates (Fijian cents/kWh)
180
160
140
120
100
80
60
40
20
0
157.5
92.7
90.8
79.8
78.5
76.5
72.1
69.5
69
62.1
55.3
54.6
54.1
50.5
41.1
44.33
Solomon Islands
Niue
Cook Islands
Marshall Islands
Vanuatu
Tuvalu
Tonga
American Samoa
Samoa
Kiribati
New Caledonia
PNG
Palau
Australia
New Zealand
Fiji