



STANDING COMMITTEE ON ECONOMIC AFFAIRS

Review of Fiji Electricity Authority 2017 and Energy Fiji Limited 2018 Consolidated Report



Parliamentary Paper No. 99 of 2019

August, 2019

Published and Printed by the Department of Legislature, Parliament House, SUVA.



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Chairperson's Foreword

The Standing Committee on Economic Affairs is pleased to report to the Parliament, its findings and recommendations on the Fiji Electricity Authority 2017 and Energy Fiji Limited 2018 Consolidated Annual reports.

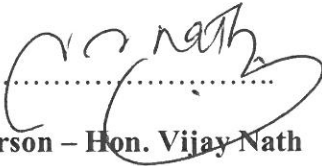
The year 2018 held great significance not only to the company but for the people of Fiji as well as it marked the successful corporatization through which Fiji Electricity Authority received its new name - Energy Fiji Limited. As we all are aware, through the corporatization, the Fijian Government extended 5% of its shareholding interest to the Fijian people, giving them an opportunity to gain financially from the growth of EFL. As of 2018, 35,736 customers had become shareholders of EFL.

The Committee, while deliberating on the reports noted EFL's goal of achieving 90% Renewable Energy by the year 2025 and conducted a site visit to various Renewable energy sources around Viti Levu to check on the progress so far. Some of the sites that were visited are as follows, the Butoni Wind farm, Nabou Green Energy plant, Wailoa, Monasavu and Nadarivatu. The Committee values the important role Renewable energy plays to help mitigate the impact of climate change and applauds EFL for embarking on new projects as well as consistently upgrading existing plants in order to achieve their goal. While conducting its site visits, the Committee was also made aware of the amount of resources (capital, labor and equipment's) invested in the maintenance and upgrade of the Renewable energy projects and appreciates the continuous efforts EFL makes despite rising operational costs. This was apparent through reduction of Fossil fuel usage from 45.45% in 2017 to 41.02% in 2018 and the increase in Renewable energy from 54.55% in 2017 to 58.98% in 2018.

For the periods of 2017 and 2018, EFL once again delivered excellent performance which is clearly evident as they maintained three straight years of gross profit of over \$70m until 2018. The Committee also noted the increased numbers of customers benefitting from the various subsidies provided by government. Further to this, we would like to take this opportunity to applaud the staff of EFL for the key role they play towards achieving the mission and vision of the organization.

Finally, I would like to thank our Committee Members who were part of the team that produced this report: - Deputy Chair Hon. Veena Bhatnagar, Hon. George Vegnathan, Hon. Filipe Tuisawau and Hon. Inosi Kuridrani. I also take this opportunity to acknowledge and thank the Parliamentary Staff who have given us invaluable support.

On behalf of the Standing Committee on Economic Affairs, I commend the Fiji Electricity Authority 2017 and Energy Fiji Limited 2018 Annual report to the Parliament.

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Chairperson – Hon. Vijay Nath

1.0 Introduction

1.1 Background

The Fiji Electricity Authority (“FEA”) was established in 1966 and was listed as a corporatized entity on 16 April, 2018 which led to its new name of Energy Fiji Limited (“EFL”). For the purpose of this report, the name EFL will be used to refer to the company. The principal activities of EFL are the generation, transmission, distribution and sale of electricity in Viti Levu, Vanua Levu, Ovalau and Taveuni as governed by the Electricity Act and Regulations.

The powers, functions & duties of the Authority under the Electricity Act is for the basic purposes of providing and maintaining power supply that is financially viable, economically sound and consistent with the required standards of safety, security and quality.

With the escalating price of fuel and given that EFL has set a goal to achieve 90% Renewable Energy by 2025, EFL has been progressing towards sustainable energy solutions to help ensure that Fijians have a secure, continuous and reliable power supply at the lowest possible cost. For instance, recently, Energy Fiji Limited had signed a power purchase agreement with an Independent Power Producer for the installation of the Namosi Hydro Scheme as an effort towards producing Renewable Energy.

1.2 Committee Remit and Composition

The Committee is made up of five (5) Members of Parliament, three (3) of which are Government members and two Opposition members. According to Section 109(2)(a) the Standing Committee is responsible to look into matters related to economic development, finance, banking and taxation.

2.0 Findings and Recommendations

1. The Committee commends FEA on their improved financial performance since TC Winston in 2016, noting that the profit after income tax had increased to \$67.3 million in 2017 from \$59.6 million in 2016. The Committee also noted that the net profit in 2018 was \$63.9m and commends EFL for third straight year of gross profit of over \$70m.
2. The Committee acknowledges the increased numbers of customers benefitting from the various subsidies provided by the government. For instance, Primary and Secondary schools have been allocated subsidized electricity tariff of 20.59 cents per unit (VEP) for the first 200 units each month. A total of 537 schools benefitted from this subsidy in 2017 and increased to 651 schools for the year 2018.
3. The Committee noted that in 2017, the Power Generation mix of 53.05% was generated from Hydro, 1.1% from biomass, 0.39% from wind totaling 54.55 % renewable energy while 45.45% emanated from fossil fuel. The Committee was pleased to note the reduction of Fossil fuel usage from 45.45% in 2017 to 41.02% in 2018 and the increase in Renewable energy from 54.55% in 2017 to 58.98% in 2018.
4. The committee commends EFL's initiatives towards replacing Fossil Fuel Generation with renewable energy, especially the engagement of Independent Power Producers (IPPs) and also acknowledges its commitment towards clean, renewable sources of Energy through its 10 years Power Development Plan (PDP).
5. The Committee noted that a Tariff review is currently underway. The last tariff increase was in 2011.
6. 2018 saw the successful corporatization of the organization and the Fijian Government's offer of 5% of its shareholding interest to the Fijian people free of charge which is highly commendable.
7. Taking into consideration the level of investment EFL places towards specialized training and skills development of staff, the Committee acknowledges the recent three (3) year bond that has been put in place which will reduce the risk of losing skilled manpower, however the Committee encourages EFL to further strengthen their succession plan.
8. The Committee had the privilege of visiting the National Control Centre in Vuda which operates for 24 hours with three shifts and controls the entire power system in Fiji. The Committee commends the commitment of the staff. However, the committee was made aware of the risk of losing accessibility to the Centre during bad weather conditions and recommends that upgrade works be carried out to ensure accessibility during emergencies.

9. The Committee noted that the international debt gearing benchmark level for electricity utilities is 45% and commends EFL for maintaining a low 15-16% debt gearing level.

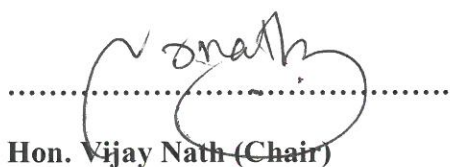
3.0 Gender Analysis

In 2017, EFL employed a total of 772 staff out of which 98 were female. For the year 2018, out of the 805 employees, 102 were female. Whilst the committee was pleased to note that 5 female employees held managerial positions, the committee further encourages gender balance at EFL.

4.0 Conclusion

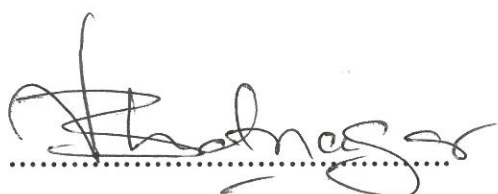
The Committee commends the overall performance of EFL and their commitment towards the sustainable success and viability of the company. The Committee encourages EFL to continue the trend of increasing renewable energy in the power generation mix, given its role as mitigation to climate change.

Members Signature



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Hon. Vijay Nath (Chair)



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Hon. Veena Bhatnagar (Deputy Chair)



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Hon. George Vegnathan (Member)



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Hon. Ro Filipe Tuisawau (Member)



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Hon. Inosi Kuridrani (Member)

ANNEXURES

STANDING COMMITTEE ON ECONOMIC AFFAIRS FEA ANNUAL REPORT 2017



Insights into FEA now EFL

| Monday 8th April, 2019 | Parliament House |
| Hasmukh Patel | Chief Executive Officer | Energy Fiji Limited |

Presentation Outline

- ▶ Fiji Electricity Authority
- ▶ Vision, Mission & Values
- ▶ Corporate Planning Framework
- ▶ Strategic Objectives
- ▶ Our Organization Setup
- ▶ FEA Power Infrastructure Map
- ▶ Strategic Assets
- ▶ Strategic Assets & Sales Statistics
- ▶ Total Asset Values
- ▶ Customer Accounts
- ▶ Where are we now with our Generation Mix?
- ▶ Our Loan Portfolio
- ▶ Debt Covenants
- ▶ Ageing Assets Replacements & Refurbishment

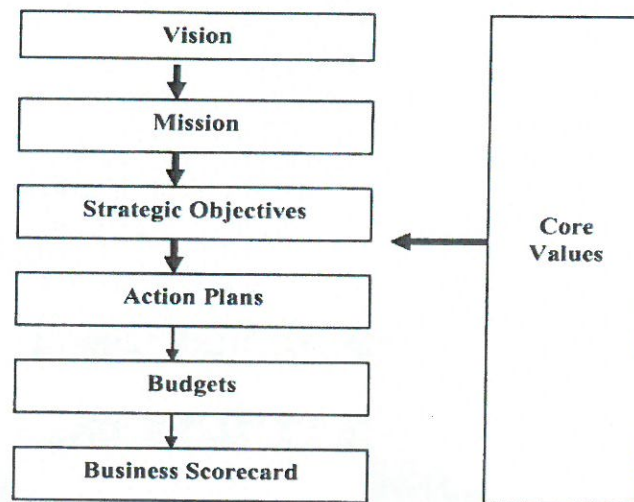
- ▶ Rural Electrification Program Funded by the Government
- ▶ FEA's Performance Management System
- ▶ Non Commercial Obligation (NCO) Cost
- ▶ Electricity Tariff Rate
- ▶ Key Achievements - 2017

Plans for the Future

- ▶ Power Development Plan (PDP)
- ▶ Renewable Energy Development Projects up to 2026
- ▶ Questions & Clarifications
 - ▶ Powering Fiji's Clean Energy Future



Corporate Planning Framework



- ▶ 3 Year Corporate Plan , Statement of Corporate Intent, Employment & Industrial Relations Plan & Strategic Human Resource Development Plan

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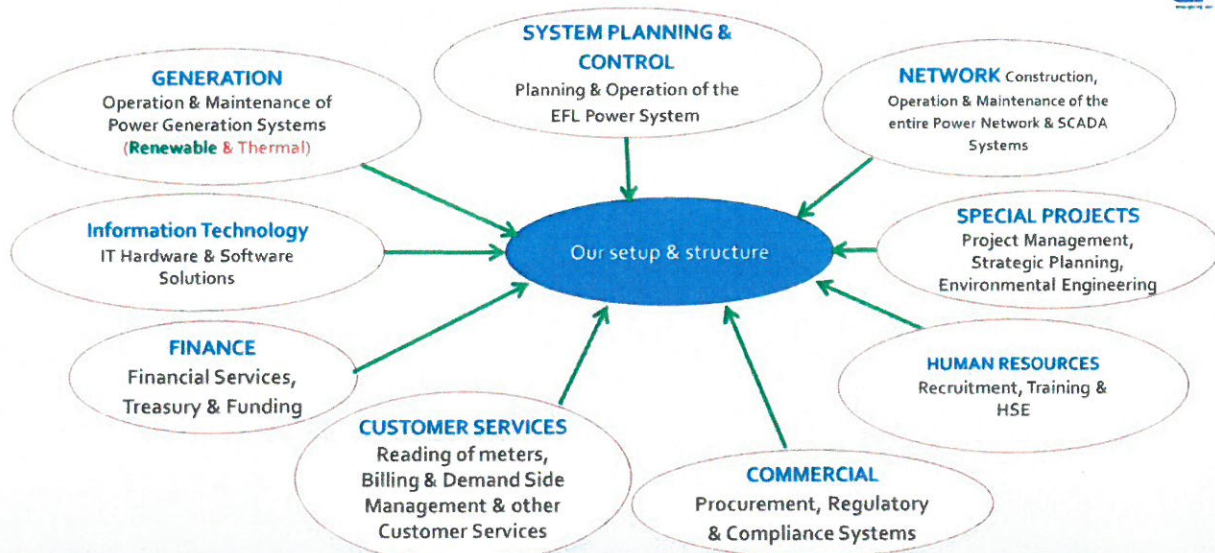
Strategic Objectives



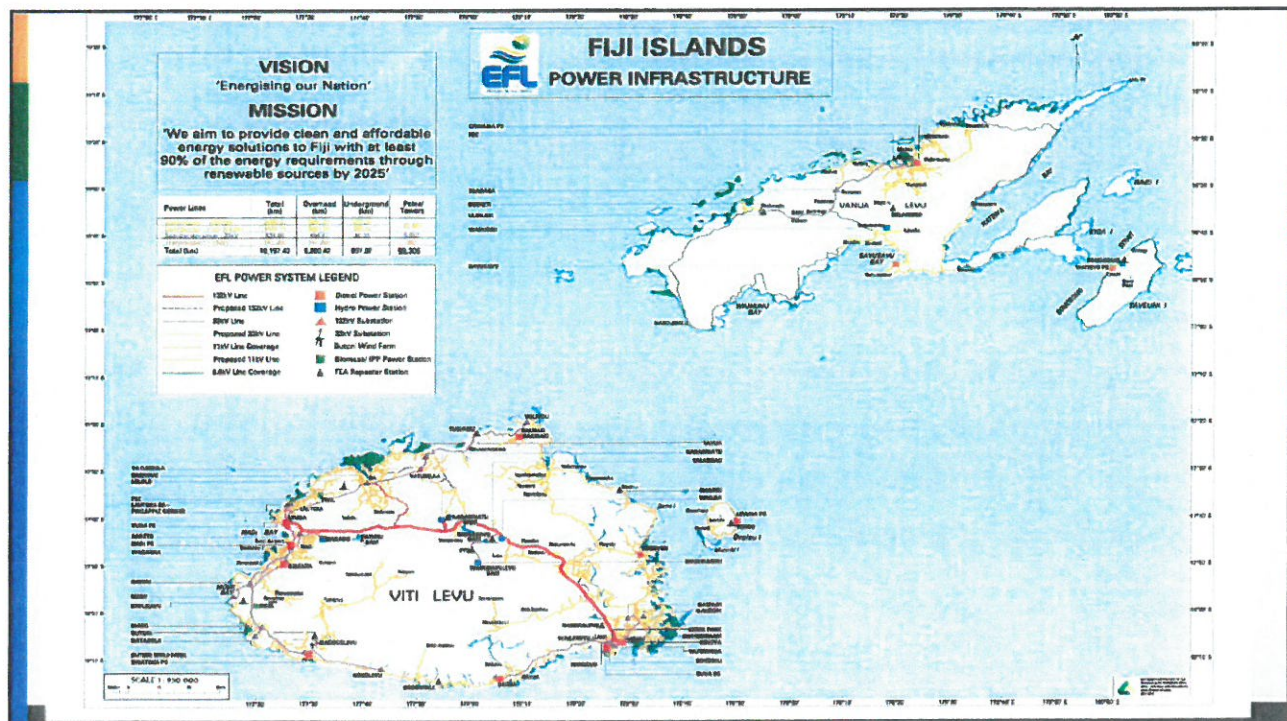
- ▶ Improve customer focus and service
- ▶ Aim to achieve at least 10% Return on Shareholder Funds (ROSF)
- ▶ Provide 90% of energy through renewable sources by 2025
- ▶ People Strategy – Enhancing productivity through the implementation of Performance Management System (PMS), improving staff satisfaction and ensuring optimum human resource capacity and skills.
- ▶ Transfer of the Regulatory functions from FEA to Government.
- ▶ Develop and implement Enabling strategies for all FEA strategic business activities
 - ▶ ICT Strategy
 - ▶ Risk Management Strategy
 - ▶ Supply Chain Strategy
 - ▶ Land Management Strategy
 - ▶ Legal Strategy
 - ▶ Environmental Strategy

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► Our Organisation Structure



The above operations are supported by Legal, Lands, Risk & Audit Departments and Corporate Affairs & Communications.



➤ Strategic Assets



Renewable Power Stations

- ▶ Monasavu Hydro Electric Scheme **
- ▶ Wainikasou Hydro Power Station
- ▶ Nadarivatu Hydro Electric Scheme **
- ▶ Butoni Windfarm
- ▶ Nagado Hydro Electric Scheme
- ▶ Wainiqueu Hydro Electric Scheme
- ▶ Somosomo Hydro Scheme

Control Centre

- ▶ Vuda National Control Centre

Zone Substations

- ▶ Viti Levu – 37
- ▶ Vanua Levu – 4
- ▶ Ovalau/Levuka – 1
- ▶ Taveuni - 1

Thermal Power Stations

- ▶ Kinoya Old**
- ▶ Kinoya New **
- ▶ Vuda **
- ▶ Labasa
- ▶ Ovalau
- ▶ Rakiraki
- ▶ Nadi
- ▶ Sigatoka
- ▶ Savusavu
- ▶ Rokobili
- ▶ Deuba
- ▶ Korovou
- ▶ Qeleloa
- ▶ Taveuni

** High Asset Values

➤ Strategic Assets & Sales Statistics



- ▶ EFL had some 10,197.43km of power network (as at 31st December, 2017)

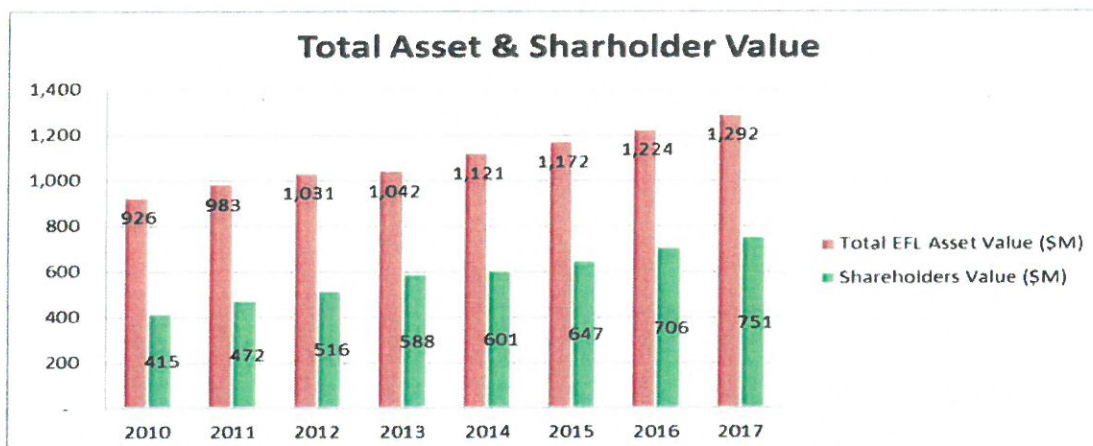
Line Type	Route (km)
Transmission Line 132kV	147.2km
Sub-transmission 33kV	534.86km
Power Distribution 11kV & 415V/240V	9,515km

Sales Statistics

- ▶ 2015 – 914.39GWh with revenue of \$321.87M | Before tax profit of \$45.3M
- ▶ 2016 – 934.21GWh with revenue of \$328.38M | Before tax profit of \$74.7M
- ▶ 2017 – 1007.71GWh with revenue of \$351.15M | Before tax profit of \$84.2M
- ▶ Commercial & Industrial Customers contributed 74.40% of EFL's Total Revenue

► Total Asset Values and Shareholder Value

- EFL's Total assets are worth \$1.292B (as at 31st December, 2017) increasing from \$926M in 2010.
- EFL has added significant shareholder value over the last 8 years.



► Customer Accounts

- Consumer Growth – From 2010 the average growth rate is around 2.77%

Years	2010	2011	2012	2013	2014	2015	2016	2017
Customer Numbers	150,724	155,912	159,017	162,656	167,017	171,939	174,530	182,413
Annual Growth		3.44%	1.99%	2.29%	2.68%	2.95%	1.51%	4.52%



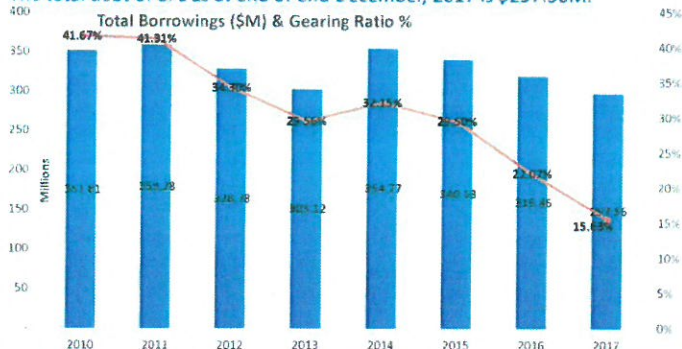
► Where Are We Now with our Power Generation Mix?

- EFL Renewable Power Stations
- Monasavu Hydro Electric Scheme – 72MW with anticipated generation of 400GWh/annum
- Nadarivatu Hydro Electric Scheme – 44MW with anticipated generation 101GWh/annum
- Butoni Wind Farm – 9.9MW with anticipated generation of 5GWh/annum
- Wainikasou Hydro Electric Scheme – 6.6MW with anticipated generation 26GWh/annum
- Nagado Hydro Electric Scheme – 2.8MW with anticipated generation of 12GWh/annum
- Wainiqueu Hydro Electric Scheme – 0.8MW with anticipated generation of 2GWh/annum
- Somosomo Hydro Electric Scheme – 0.7MW with anticipated generation of 2GWh/annum



► Our Loan Portfolio

- The total debt of EFL as at end of end December, 2017 is \$297.56M.



Bonds & Loans	2018 - \$M	2019 - \$M	Beyond 2020 - \$M	Total - \$M
Bonds	0	29.25	8.00	37.25
ANZ	17.11	17.8	160.34	195.25
FNPF	4.8	4.99	50.22	60.01
SCC	0.05	0.05	4.95	5.05
Total	21.96	52.09	223.51	297.56

- EFL is a highly capital intensive industry and borrowings to fund its capital projects on an annual basis is inevitable
- EFL has secured all its ANZ loans via debenture mortgage over the assets of FEA
- Around F\$100M of FEA's borrowings is secured by Government Guarantee
- The average cost of borrowing of FEA has reduced significantly over the years (averaging 4%)
- EFL has never defaulted on its loan repayments in the past

➤ Debt Covenants



A) FNPF	Covenants	Formula	2010	2011	2013	2014	2015	2016	2017
1	Interest Cover Ratio	EBITDA Net Interest		N/A		/	/	/	/
2	Tangible Net Worth	Total Assets Total Liabilities		N/A		/	/	/	/
B) ANZ Bank	Covenants	Formula	2010	2011	2013	2014	2015	2016	2017
1	Debt to EBITDA	Debt EBITDA	/	/	/	/	/	/	/
2	Gearing	Total Liabilities Total Equity	/	/	/	/	/	/	/
3	Debt Service Cover Ratio	EBITDA Annual Debt	/	/	/	/	/	/	/

- The key driver to the debt covenants of EFL is the EBITDA which means that EFL must make reasonable profits every year to adhere to the covenants.
- EFL has never defaulted in its loan repayments in the past
- EFL has never breached any of its debt covenants signed with lenders which could expose Government being the sovereign guarantor of FEA's borrowings
- EFL has to strictly comply with the debt covenants to also ensure that ANZ Bank does not call on the Debenture Mortgage which is used as security.

➤ Ageing Assets Replacements & Refurbishment



- EFL has ageing assets that needs urgent replacement & refurbishment which would cost around \$150M and is expected to be completed by 2025. This exercise commenced in 2017. EFL has spent some \$6M as at December 2017.
- Monasavu Hydroelectric Scheme Half Life Refurbishment commenced in 2013 and to date some \$60M has been spent. This exercise will take another 5 years to complete and will cost another \$50M.

➤ Rural Electrification Program Funded by the Government



- ▶ With the Government increasing its budget allocation towards Rural Electrification, FEA has also increased its resources internally as well as increased the number of external electrical contractors who can be deployed for the timely construction of these rural electrification schemes. A summary of the rural electrification schemes implemented by FEA from 2015 to 2017 is tabulated below:

	2015	2016	2017
Total funds spent on Rural Electrification	\$6.3M Govt & FEA contributed towards these schemes	\$2.5M	\$22.1M
Total RE Schemes Completed	55	40	70
Households Connected	2,324	796 (*Low connections due to TC Winston Restoration works)	3,314

➤ EFL's Performance Management System



- ▶ PMS is aligned to the FEA Strategic Objectives
- ▶ The Corporate Scorecard is based on the strategic objectives of the organization
- ▶ Strategic Business Area (SBA)/Divisional Scorecards are developed from the Corporate Scorecard
- ▶ An Independent Audit is undertaken by external auditors to assess the Corporate Performance each year
- ▶ We need to recognize and reward every employee
- ▶ FEA was awarded with Quality Circle Model Organization Award in 2015

► Key Achievements - 2017



- ▶ The profit recorded in 2017 of \$67.39M enabled FEA to achieve all of the Financial Covenants signed with ANZ Bank and FNPF. This ensured that Government, being the sovereign Guarantor of FEA's loans, was not exposed.
- ▶ For the first time in the history of FEA, FEA paid a Dividend of \$20M to the Government of Fiji.
- ▶ FEA carried out Capex works totalling around \$47M in 2017 and repaid mandatory principal loan repayments aggregating to \$21.8M from internal cash flows.
- ▶ Completed Rust refurbishment work on 37 out of 110 lattice steel towers and replaced 132kV insulators on a total of 10 transmission towers as part of the Monasavu half-life refurbishment program. The cost of the entire exercise is estimated to be around \$12M.
- ▶ A total of 70 Rural electrification projects were commissioned in 2017 as part of the Rural Electrification program, benefitting 3,314 households.
- ▶ FEA Quality Circle Teams who represented Fiji at the Asia Pacific Quality Organization, ACE Team Awards which was hosted in Manila, Philippines was awarded Gold as well as Overall Most Productive Team Award at the Convention.

Plans for the Future



➤ Power Development Plan (PDP)



- ▶ EFL reviews its 10 year Power Development Plan (PDP) every 2 years.
- ▶ The ten (10) year power development plan contains the load forecasting and power generation planning scenarios up to 2026 for Viti Levu, Vanua Levu, Ovalau and Taveuni Power Systems with associated network assets to be augmented/developed and the investment plan required to implement this 10 year Power Development Plan.
- ▶ It is estimated that the total funding to execute the 10 year Power Development Plan will require an investment of around FJ\$2.4B.
- ▶ F\$1.6B will be required for the development of power generation projects and around \$0.8B investment will be required in the transmission & distribution power network sector.
- ▶ EFL expects the private sector to invest in the Power Generation Sector as Independent Power Producers (IPP).
- ▶ Discussions with prospective IPPs to develop various Renewable Energy technologies. i.e. Biomass/Waste to Energy Projects, Solar Projects & Hydro Projects are ongoing.

➤ Renewable Energy Projects up to 2026



EFL plans to develop the following renewable energy schemes with participation from the private sector:

- ▶ Biomass – Waste to Energy Plants
- ▶ Solar – 3 x 5MW in partnership with the Private Sector plus ESS
- ▶ Wind Turbine Farms – Vertical axis wind turbine
- ▶ Hydro – Upper Wailoa/Qaliwana Diversion Project & the Lower Ba Project
 - ▶ Presently EIB is carrying out full feasibility studies for these two projects via grant aid.
 - ▶ It is anticipated that the feasibility studies will be completed in the next 12 months.

Private Sector Participation - Independent Power Producer (IPP)

- ▶ 3 Hydro Power Plants in Namosi with a total capacity of 32MW and anticipated total energy output of 120M units/annum. PPA signed in December, 2017, land acquisition in progress.

➤ Funding the Power Development Plan (PDP)



- ▶ EFL requires the participation of the private sector in developing renewable energy power plants in Fiji
- ▶ EFL will negotiate with the Private Sector to arrive at a feed-in tariff depending on the technology that will result in a win-win situation for both parties
- ▶ EFL will be required to fund transmission and distribution power network of around \$800M. This can be partially funded through EFL's surplus cash or long term borrowings from commercial banks/financial institutions.
- ▶ The power generation project considered bankable will be funded via long term borrowings from commercial banks/financial institutions as the benefits are also long term.
- ▶ Any borrowings that will be raised by EFL will require Government guarantee/or Debenture Mortgage as a security.
- ▶ EFL must keep in mind that it must not exceed the gearing level of 45% when it borrows money to fund capital projects.

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➤ Questions & Clarifications

- ▶ The Electricity Sector is a key economic driver & needs everyone's collective support
- ▶ Vinaka
- ▶ Powering Fiji's Clean Energy Future



Hasmukh Patel
Chief Executive Officer
Energy Fiji Limited



➤ Fiji Electricity Authority



- ▶ FEA was established in 1966 under the Electricity Act with the basic function to provide and maintain a power supply that is financially viable, economically sound and consistent with the required standards of safety, security and quality of power supply.
- ▶ FEA (now EFL) is responsible for the generation, transmission and retail of electricity in the larger islands of – Viti Levu, Vanua Levu, Ovalau & Taveuni, which account for approximately 90% of the country's population.
- ▶ Uniform tariff rates are charged for electricity used by each consumer group, determined by the Fijian Competition & Consumer Commission (FCCC) in consultation with Government
- ▶ The EFL Board of Directors consists of 6 members (3 – private sector), Public sector representation – PS MITDMMS, Ministry of Economy Rep & CEO

3

➤ VISION ◀

Energising our Nation

➤ MISSION ◀

"We aim to provide clean and affordable energy solutions to Fiji with at least 90% of the energy requirements through renewable sources by 2025"

➤ VALUES ◀

1. Customer Focus
2. Honesty
3. Courage to do what's right for EFL
4. Team Work
5. Individual Accountability
6. Transparency
7. Innovativeness



FEA 2017 Report and Overview of Renewable Energy Sector

Presentation to the Standing Committee on Economic Affairs
10th April 2019

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Overview

1. Purpose
2. Linkages and Targets
3. Policies and Strategies
4. Highlights of FEA 2017 Annual reports.
5. Government Initiatives in Renewable Energy
6. Incentives

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Purpose

- The purpose of the presentation is to provide our submission to the FEA Annual Report 2017 and;
- Government Plans in terms of Renewable Energy targets.

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Linkages and Targets

SDG

- ensure universal access to affordable, reliable and modern energy services - 2030.
- increase share of Renewable Energy in the global mix - 2030.
- double the global rate of improvement in energy efficiency. - 2030

NDP

- Provide 100% electricity access to all Fijians by 2021
- Increase share of Renewable Energy to 100% by 2036

NDC

- To reduce 30% of CO2 emissions from the energy sector by 2030.
- 20% Renewable Energy and;
- 10% from Energy Efficiency

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Policies, Plans and Strategies

- * 5 Year and 20 year National Development Plan.
- * NDC Implementation Road map.
- * EFL Power Development Plan 2017-2026.
- * Electricity Act 2017.
- * Draft National Energy Policy 2014
- * Rural Electrification Policy 2016.
- * National Climate Policy
- * National Transport Policy 2017.

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Key Stakeholders

- | | |
|-------------------------------|--|
| • Energy Fiji Limited | • Fiji Competition and Consumer Commission. |
| • International Partners | • Ministry of Economy. |
| – World Bank | • Solicitor Generals Office |
| – Asian Development Bank | • Ministry of Rural and Maritime Development |
| – UNDP | • Fiji Revenue and Customs Services. |
| – IRENA | • IPPS (GIMCO, FSC and TWIL) |
| – ISA | |
| – etc | |
| ▪ Private Contract Companies. | |

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Highlights of EFL 2017 Annual Report

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EFL Board and Subcommittee

- **Board Composition** - Consist 6 members
 - Board Chairman,
 - Deputy Chairman,
 - 3 member (PS MOIT, MOE, Private sector),
 - Ex-Officio member (EFL CEO).
- **Subcommittees**
 - Major Projects Sub-Committee
 - Audit and finance Subcommittee'
 - HR Sub-Committee
 - Tender Sub-Committee
 - Policy Based Cooperate

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Monasavu Hydro Scheme Half-Life Refurbishment and other Related Maintenance

- FEA continues and completed the program in 2017 which was commenced in 2017.
- Total half-life refurbishment amounted to 17.5 million.
- 132kV circuit breakers replaced with old ones.
- 132kV transmission line were installed from Nadarivatu at the Wailoa and Vuda substations at a total cost of \$300K.
- 132kV disconnector/isolator/earth switches at cunningham road substation was replaced. Total cost \$700K.
- Porcelain insulators were replaced with the total cost \$180K.
- 37/110 lattice steel towers were refurbished including insulators. Total cost estimated to be \$12M to be completed by 2019.

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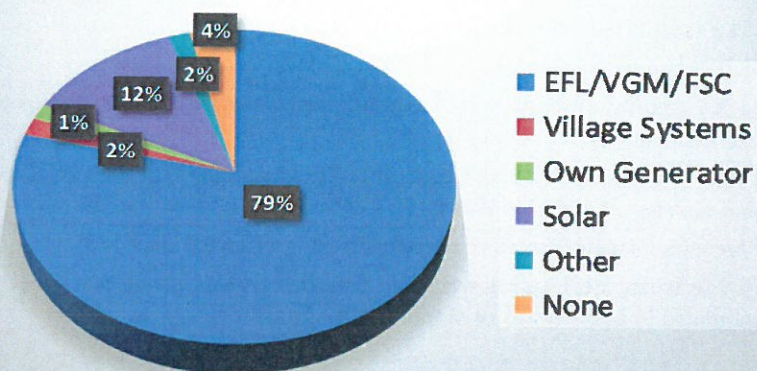
Energising More Fijians

- In 2017 EFL total number of customers increased by 4.52% from 174,530 in December 2016 to 182,413 in December 2016.
- In 2017, EFL customers were made up of;
 - 100 Industrial Customers
 - 18,092 Commercial Customers
 - 164,221 Domestic and Industrial Customers.
- In 2017 the demand of electricity increased compared to 2016 as follows;
 - 9.45% for domestic customers
 - 6.92% commercial sector
 - 4.97% industrial customers

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National Access to Electricity

Electricity Supply by Source



Source: ADB Technical Report 2018

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Electricity Subsidy for Low – Income Families

- Eligibility to combine household income of \$30,000 and below.
- The purpose is to subsidise half of the first 100 kilowatt hours of electricity usage per month (15.9 cents VEP by government and 17.20 cents by customers).
- 13,036 domestic customers benefited.
- In addition 537 schools were subsidised to 20.59 cents for first 200 units. Thereafter the tariff rate is 33.10 cents.

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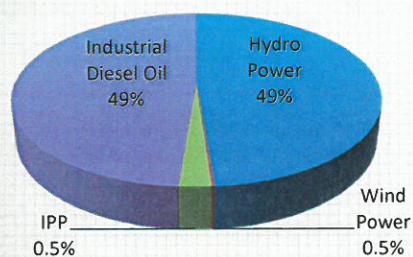
Key Performance Indicators - EFL

No	KPI	Outcome
1	Meeting Lenders Requirement	Achieved.
2	Meeting statutory Obligations	Achieved.
3	Satisfying Customers	Achieved
4	Purchasing Power from Independent Power Producers	Achieved
5	Completing Actions for Divestment-	Achieved.
6	Advancing the lower BA Hydro Project	In progress
7	Extending the Korovou-Tavua Line	Achieved.
8	Refurbishing the Monasavu Hydro Plant	Achieved.
9	Developing the Qaliwana Upper Wailoa Diversion Hydro	In progress
10	Upgrading of aging Assets	Achieved.

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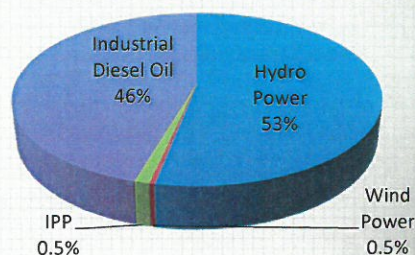
Core Business – FEA Power Generation Mix

2017 Power Generation Mix



Total Renewable Generation – 51.28%
Total Non Renewable – 48.72%

2016 Power Generation Mix



Total Renewable Generation – 54.55%
Total Non Renewable Generation - 45.45%

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Renewable Energy Generation

Generation	Wailoa Power	Nadarivatu Hydro	Wainikasou Hydro	Nagado Hydro	Butoni Wind
Capacity (Units)	400M	100M	26M	12M	10M
2017 (Units)	381M	86M	20.9M	3.3 M	2M
2016 (Units)	384M	85M	21.2M	0	2.85M

Source: 2017 EFL Report

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Power Development Plan (PDP)

- ▶ EFL reviews its 10 year Power Development Plan (PDP) every 2 years.
- ▶ The ten (10) year power development plan contains the load forecasting and power generation planning scenarios up to 2026 for Viti Levu, Vanua Levu, Ovalau and Taveuni Power Systems with associated network assets to be augmented/developed and the investment plan required to implement this 10 year Power Development Plan.
- ▶ It is estimated that the total funding to execute the 10 year Power Development Plan will require an investment of around FJ\$2.4B.
- ▶ F\$1.6B will be required for the development of power generation projects and around \$0.8B investment will be required in the transmission & distribution power network sector.
- ▶ EFL expects the private sector to invest in the Power Generation Sector as Independent Power Producers (IPP).
- ▶ Discussions with prospective IPPs to develop various Renewable Energy technologies. i.e. Biomass/Waste to Energy Projects, Solar Projects & Hydro Projects are ongoing.

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EFL POWER DEVELOPMENT PLAN (2017 – 2026)**Cont'd**• **PROPOSED PROJECTS FOR VITI LEVU**

	Generation Name	Type	Capacity(MW)	Year
1	Nabou Green Energy Limited - IPP	Biomass	12	May-2017
2	Qeleloa Solar IPP	Solar	5	2019
3	Naboro Land fill	Waste to energy	10	2020
4	Solar IPP with battery banks	Solar	20	2021
5	Namosi - IPP	Hydro	30	2023
6	Qaliwana	Hydro	22	2021
7	Lower Ba	Hydro	28	2025
	Total		125	

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EFL POWER DEVELOPMENT PLAN (2017 – 2026)**Cont'd**• **PROPOSED PROJECTS FOR VANUA LEVU**

	Generation Name	Type	Capacity(MW)	Year
1	Tropik, Nabouwalu	Biomass	3	2020
2	Solar IPP	Solar	5	2021
3	Hydro	Hydro	4	2022
	Total		12	

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EFL POWER DEVELOPMENT PLAN (2017 – 2026)

Cont'd

• PROPOSED PROJECTS FOR OVALAU

	Generation Name	Type	Capacity(MW)	Total Capacity	Year
1	Viro Village	Solar/Wind Hybrid	2 x 250kW Wind + 0.5MW Solar with storage	1MW	2022

• PROPOSED PROJECTS FOR TAVEUNI

	Generation Name	Type	Capacity(MW)	Year
1	Solar	Solar Grid Connect	1	2020

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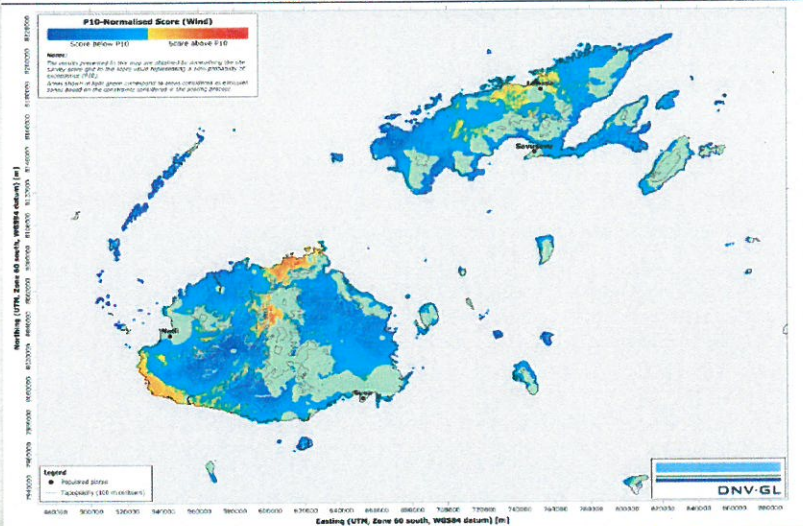
Government Initiative -Renewable Energy Development Program

- 1) To Develop untapped Renewable Energy Resources around the country where possible such as wind, solar, hydro Wave, Geothermal and biomass.
- 2) Currently 15 wind monitoring (bankable projects) installed at different sites in Viti Levu. to measure wind, solar, temperature and humidity related parameters for at least 10 years
- 3) To reach communities which located further away from the grid through Renewable Mini Grids and stand alone systems such as Solar Home Systems (12,000 installed – 2005 - 2018).
- 4) Energy Hybrid System (PV/ESS/Battery) - Develop, study and produce policies for the Energy Hybrid Type of project. The current pilot projects have been commissioned in Namara Village, Tukavesi and Solevu.
- 5) To produce relevant studies on the potential for possible grid connect Renewable systems. (Currently IRENA is performing the Grid Capability Studies to determine the potential of PV penetration into the grid).

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Solar Resource Assessment

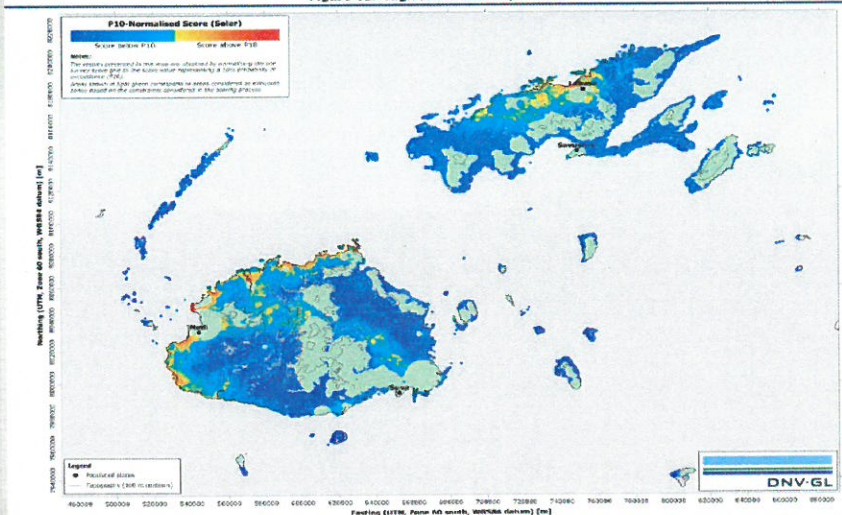
Figure C1. High site score map - wind



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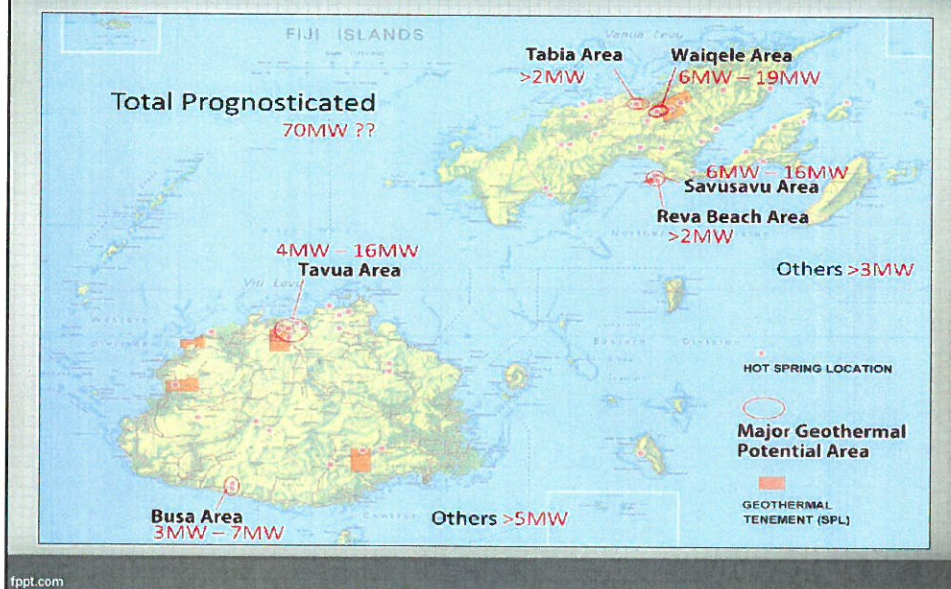
Wind Resource Assessment

Figure C2. High site score map - solar



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Geothermal Potential Sites



Tukavesi Mini Grid System



Solar Home System



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Incentives - FRCS

- Tax Holiday: 10 year tax holiday until 31 Dec 2026 for new activity in processing agricultural commodities into bio-fuels
- Minimum level of investment of \$1,000,000; Employ 20 local employees or more
- Duty free on importation of plant, machinery, equipment and chemical.
- 5 year tax holiday is available for undertakings in RE and co-generation power projects
- 5 year tax incentive (only VAT paid) for imported Energy Efficient equipment's
- 5 year tax incentive (only VAT paid) for imported renewable energy equipment's including solar, hydro, biomass, biogas, wind, solar water heaters, solar water pumps, geothermal

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Thank You

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