Energy Security and Resilience in Fiji

Fatiaki Gibson | Chief Executive Officer | Energy Fiji Limited ("EFL") |

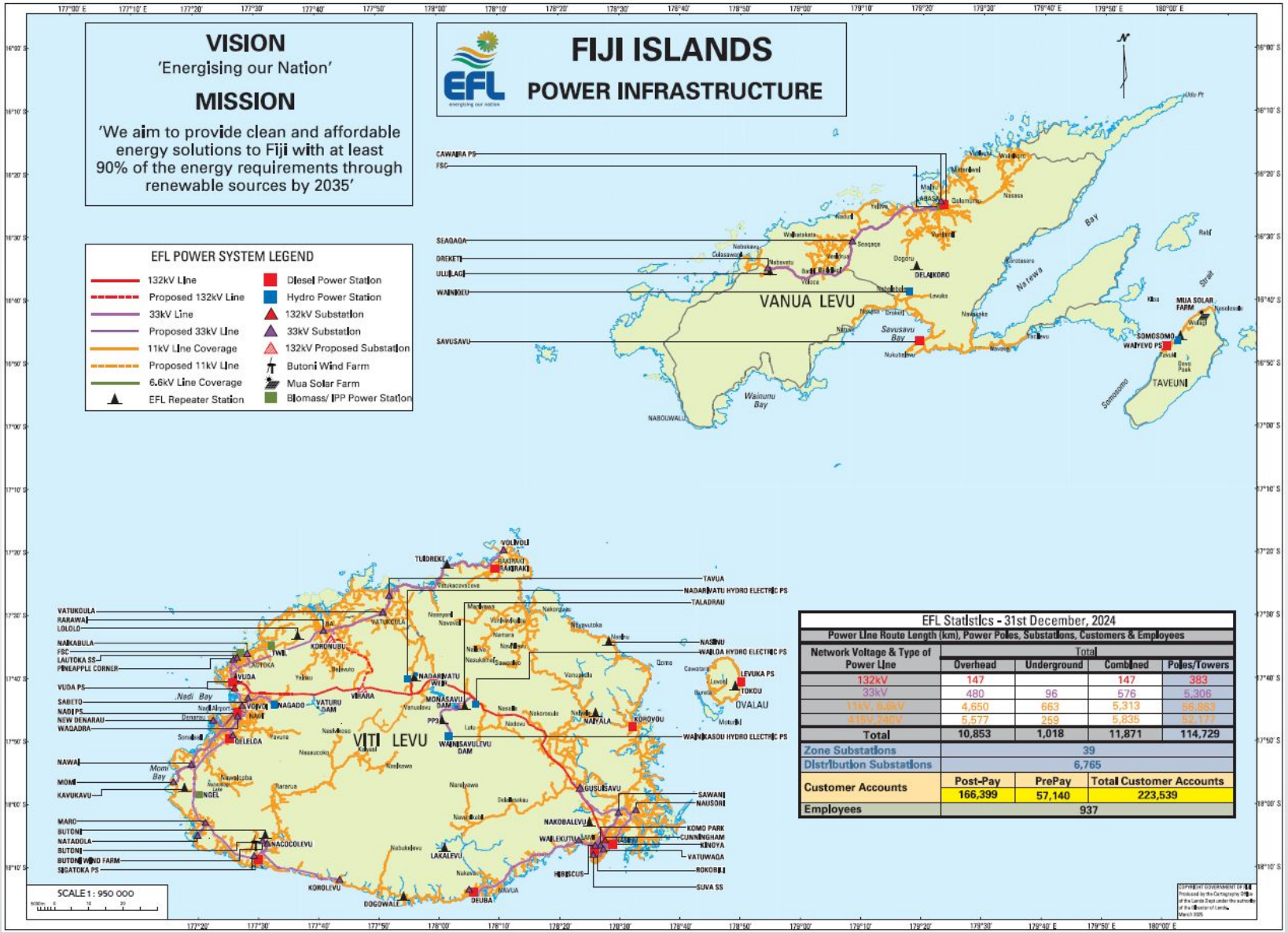
June 2025

20th Asia Clean Energy Forum

Presentation Outline

- About EFL
- Energy Production – Historical and Future Plans
- Future development Plans for sustainability and energy security

Areas of Coverage



EFL Statistics - 31st December, 2024

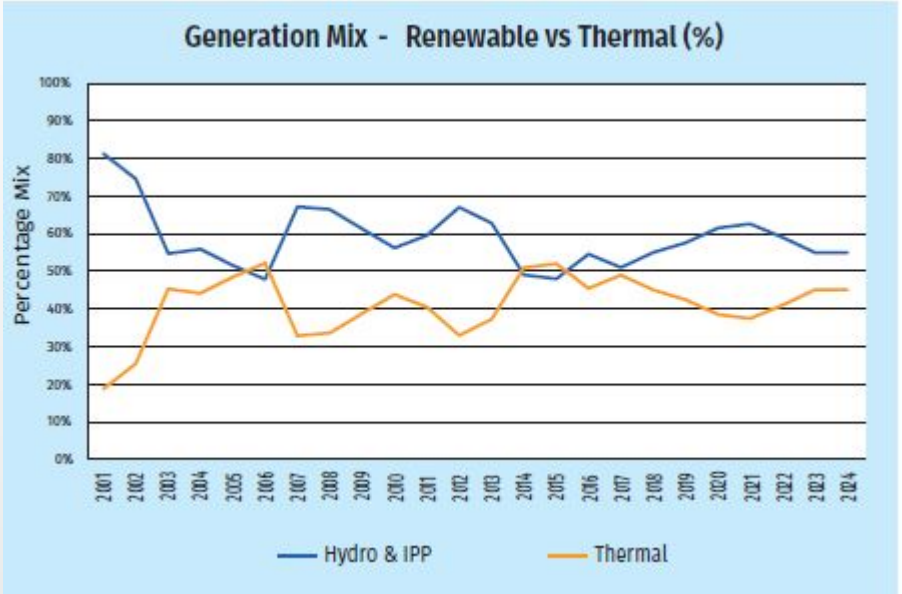
Power Line Route Length (km), Power Poles, Substations, Customers & Employees

Network Voltage & Type of Power Line	Total			
	Overhead	Underground	Combined	Poles/Towers
132kV	147		147	383
33kV	480	96	576	5,306
11kV, 6.6kV	4,650	663	5,313	58,883
415V 240V	5,577	259	5,835	52,177
Total	10,853	1,018	11,871	114,729
Zone Substations	39			
Distribution Substations	6,765			
Customer Accounts	Post-Pay	PrePay	Total Customer Accounts	
	166,399	57,140	223,539	
Employees	937			

EFL's Infrastructure GIS Map as at 31st December 2024

Historical Power Generation Mix

Years	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Units Generated Wailoa Hydro Mwh	314,341	320,875	384,451	381,527	433,970	454,262	451,608	440,981	461,654	409,723
Units Generated Wainiqeu Hydro Mwh	983	834	718	448	129	877	397	45	59	1,059
Units Generated Wainikasou Hydro Mwh	15,027	19,895	21,258	20,912	21,712	18,230	23,024	19,252	18,982	25,601
Units Generated Nagado Hydro Mwh	3,080	11,357	3,296	-	-	-	-	-	-	-
Units Generated Nadarivatu Hydro Mwh	67,537	52,988	85,765	86,075	108,739	83,497	80,628	85,043	114,330	99,645
Units Generated Somosomo Hydro Mwh				2,227	2,159	2,526	2,516	2,541	3,071	3,230
Total Generated Hydro MWh	**400,968**	**405,949**	**495,488**	**491,189**	**566,709**	**559,392**	**558,173**	**547,862**	**598,096**	**539,258**
Units Generated in VLIS Diesels MWh	230,957	227,042	83,283	116,470	69,136	54,552	11,546	2,953	21,266	90,985
Units Generated Diesel Others MWh	49,605	47,258	49,615	50,609	54,866	51,812	50,047	50,115	52,576	57,758
Units Generated HFO Kinoya & Vuda	173,477	206,122	291,609	323,879	299,739	343,258	288,377	274,742	335,958	356,805
Total Generated Thermal MWh	**454,039**	**480,422**	**424,507**	**490,958**	**423,741**	**449,622**	**349,970**	**327,810**	**409,801**	**505,547**
Unit Generated from Butoni Wind Farm	4,269	5,674	3,632	2,083	2,558	3,419	1,136	293	93	62
Total Generated Wind & Solar MWh	**4,269**	**5,674**	**3,632**	**2,083**	**2,558**	**3,419**	**1,136**	**293**	**93**	**62**
Total EFL Generation (MWh)	**859,276**	**892,045**	**923,628**	**984,230**	**993,009**	**1,012,433**	**909,278**	**875,965**	**1,007,991**	**1,044,867**
Generation - Independent Power Producers	**32,513**	**22,350**	**10,580**	**23,483**	**39,939**	**48,816**	**67,094**	**61,053**	**73,471**	**76,115**
Total Generation	891,789	914,395	934,208	1,007,713	1,032,947	1,061,249	976,372	937,018	1,081,461	1,120,982

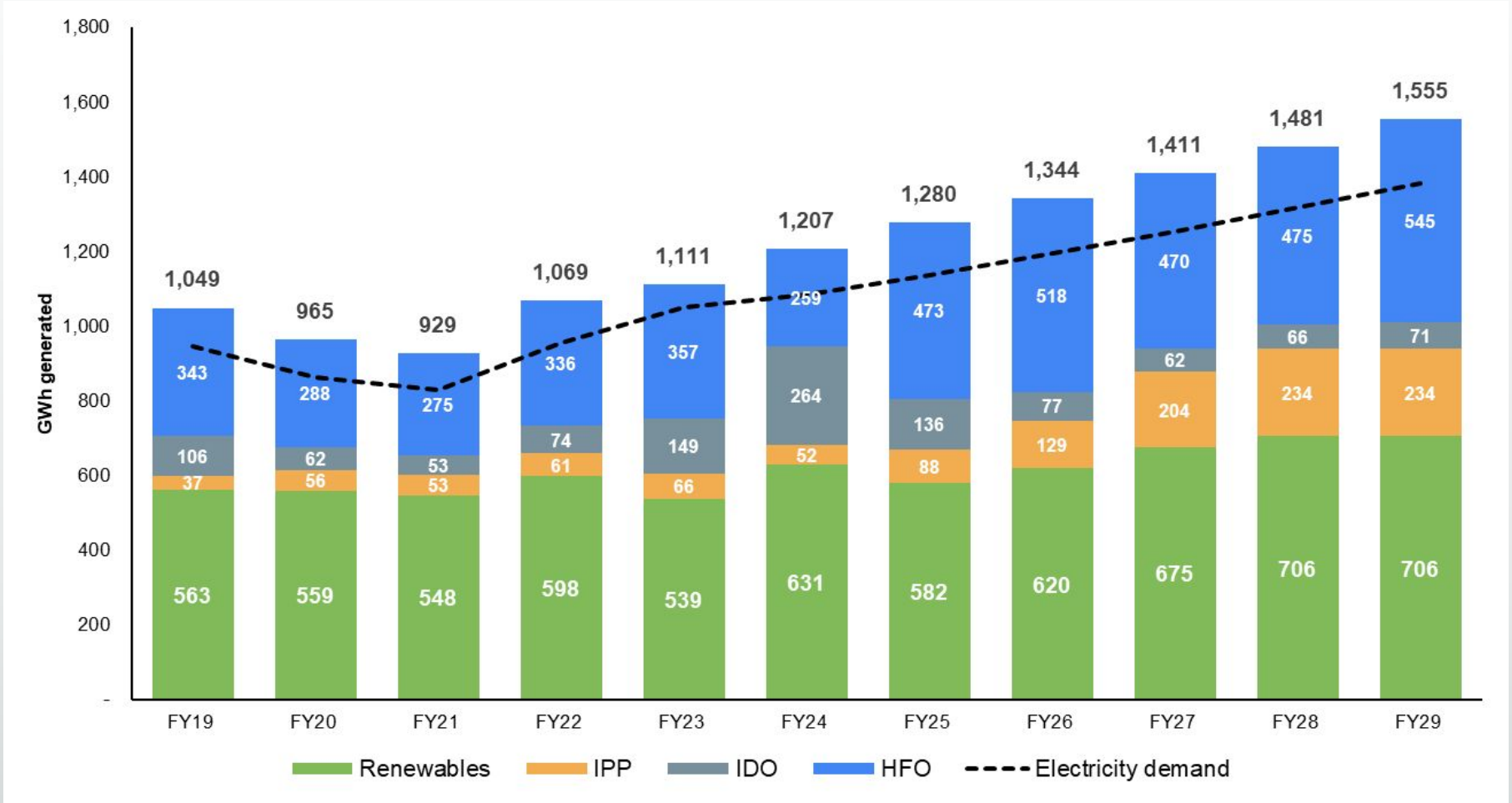


Historical Power Generation Mix

- EFL's power generation mix is from a diverse range of sources
- Sustainability is a key factor in choice of power generation source

Meet Growing Demand and Sustainability Targets

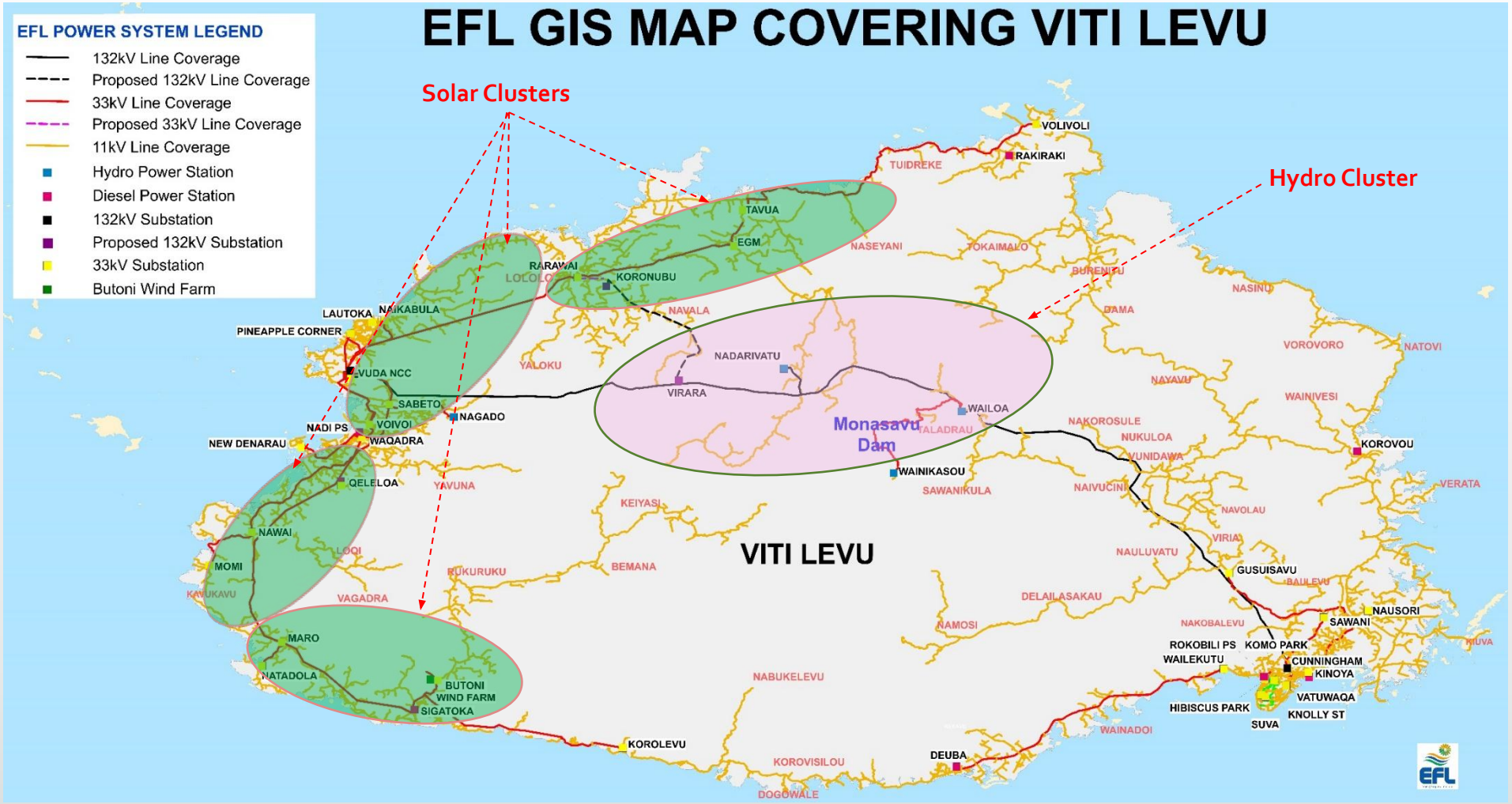
Generation forecast (GWh)



For 60% renewables by 2029:

- EFL renewables increases 124 GWh by 2029
- 199 GWh decrease in fossil fuel generation in 2029 relative to prior proposal
- 5% year on year growth in demand

Renewable Energy Zones



Renewable Energy Transition Planning

- Creation of renewable energy zones (4x solar clusters, Western region and 1x hydro cluster in center of island)
- Transmission network will be developed to connect generation sources from these resource-rich zones/clusters to load centers

Renewable Energy Development Program (a snapshot) (2025 – 2030)

Viti Levu

Type of Source	Key Details of Project
Grid Connected Solar with Batteries	• Develop and connect at least 165MW solar with battery energy storage systems • EFL and private sector to share the development target (50/50 proportion envisaged, with IFC and ADB already engaged)
Hydro-Electric Schemes	**Qaliwana Hydro-electric Scheme with Upper Wailoa Diversion** • Prepare project for development (subject to completion of additional work under the F/S) **Vatutokotoko hydro-power scheme** • Obtain permits (environment, social), finalise tender design, confirm funding source and progress development (to achieve completion by early 2031)
Transmission Network	• Associated transmission system has to be developed (new 132kV transmission lines, new 132kV switching stations and connecting substations, and 33kV sub-transmission networks)
Systems, People	• Revamp & modernise the National Control Center to better manage the grid and the various energy sources • Wide-area network creation • Capacity building of EFL teams across the organisation

Renewable Energy Development Program (a snapshot) (2025 – 2030)(cont'd)

Vanua Levu

Type of Source	Key Details of Project
Solar	**10MW Solar Power Plant in Seaqaqa Area with Battery Energy Storage** • Develop and commission by 2027 (under pre-tender design and permitting phase)

Ovalau

Type of Source	Key Details of Project
Solar	**4MW Solar Power Plant in Bureta with Storage** • PPA signed in 2023, Target to bring online by Q4-2026 (under Conditions Precedent phase) • Can displace up to 50% energy produced from fossil fuels

Taveuni

Type of Source	Key Details of Project
Solar	**1MW Solar Power Plant in Mua with Storage** • Commissioned and online in Q1-2024 • With this, Taveuni demand in the next few years can be met through clean energy sources (hydro and solar)

Investment Required to Keep the Lights on and Meet Renewable Energy Targets till 2029

SOLAR GENERATION

$200M

co-investment in grid-scale solar farms

TRANSMISSION ASSETS

$731M to strengthen and expand the grid

CONTROL CENTRE UPGRADES

Improve operability of the grid with new generation mix

$39M

HYDRO GENERATION

$363M

for new Lower Ba River project

$290M

for new Upper Wailoa River project

THERMAL GENERATION

$251M

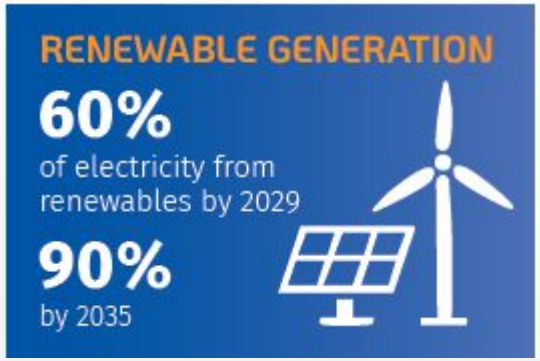
for new power stations at Vuda, Kinoya, & Labasa

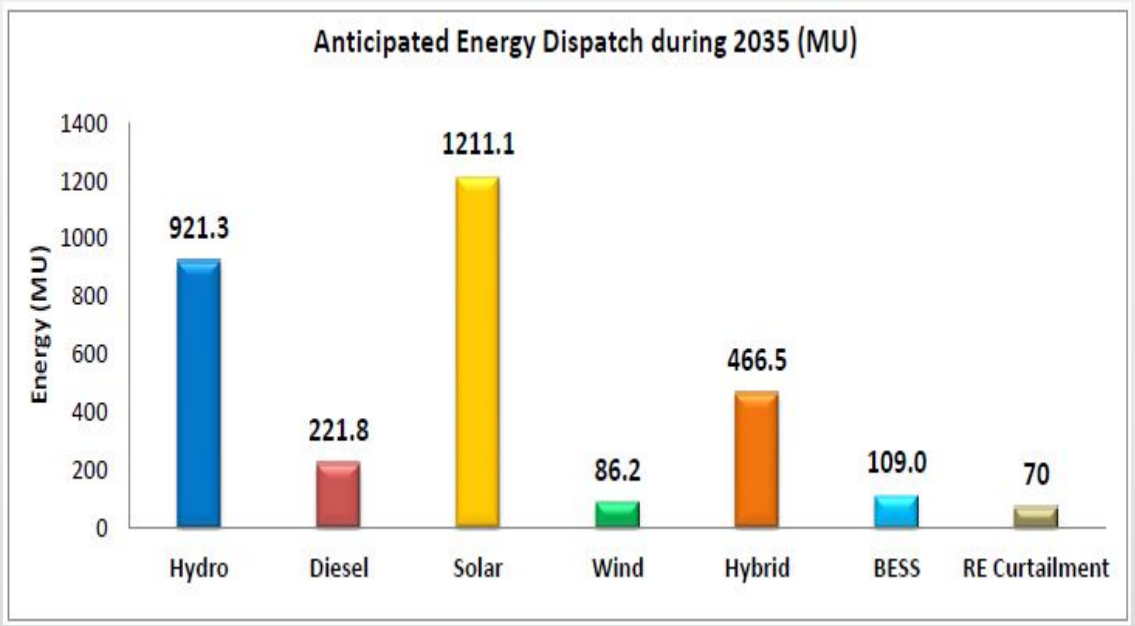
$62M

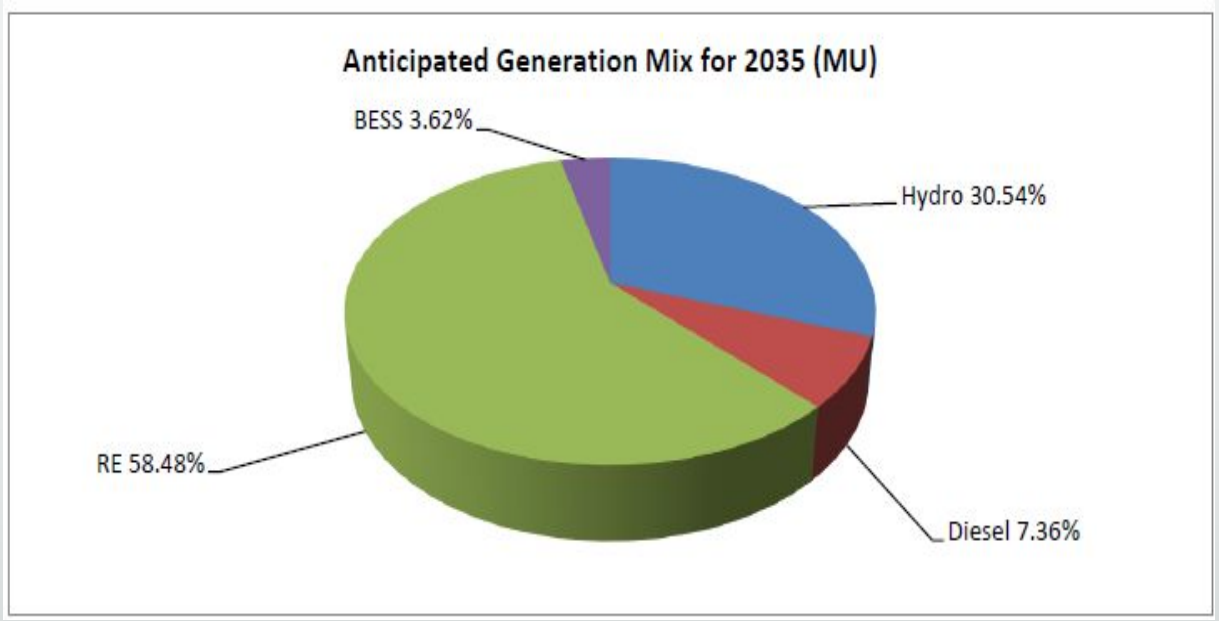
for upgrades to existing plants

All figures in FJD, as at 2025

Ten-year (up to 2035) Transition Plan to achieve 90%-Renewable Target







Renewable Energy Development Challenges & Funding

Challenges	Key Details
Land Acquisition or Lease	Landowners are wanting a better return on their resource or participation in the development; or even the identification of the rightful LoU
Engineering, Technology & Technical Knowhow	Utilities require technical assistance (TA) in this regard and support from Development partners, Donor Agencies, etc, to carry out FS, Project Designs and Supervision, contract administration, etc.
Project implementation in the PICs	Shipping restrictions & timings, absence of major lifting and transportation equipment, roading infrastructure to name but a few
Ability to payback loans with a Sovereign Guarantee required	Balance Sheet strength, cost structure, revenue collection and tariff rate setting mechanisms
Political Stability	Stable Government Leadership, political will to deliver and the protection of contractual law and obligations with Tax Incentives to attract investment

Funding Sources	Key Details
Blended Financing Sources	From Multi lateral Partners on concessional rates, grace periods and long term funding plan From GCF, CIF, etc on very concessional rates, grace periods and long term funding plan Local Commercial Banking Syndicates Investment by IPPs and de-risking guarantees from CIF for example Utility Balance Sheet and JV arrangements e.g. superannuation funds

VINAKA

Noqu EFL
EFL Customer Portal

EFL
energising our nation