

FIJI CLEAN ENERGY INVESTMENT FORUM



FEA's Strategies & Plans and Opportunities in Fiji's Renewable Energy Sector

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Presentation Outline

- Vision & Mission
- An Overview
- FEAs Power Infrastructure
- FEAs Strategic Assets & Locations
- Demand & Supply Statistics
- FEAs Strategies & Plans
 - Generation
 - Transmission
- Opportunities in Fiji's Renewable Energy Sector
- Comments, Questions, Answers & Discussions

Vision and Mission

VISION

“Energising our Nation”

MISSION

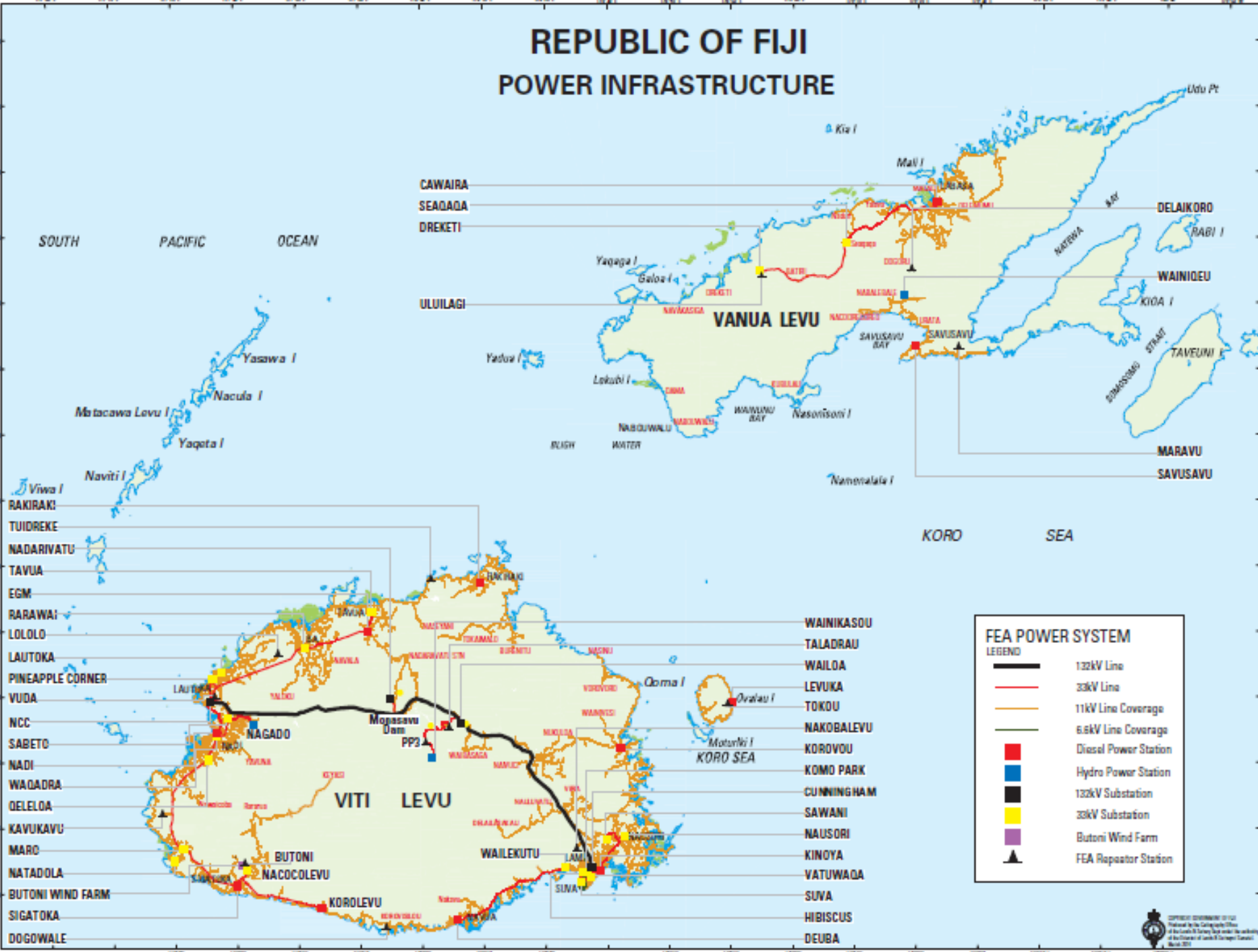
“We aim to provide clean and affordable energy solutions to Fiji with at least 90% of the energy requirements through renewable sources by 2025”

An Overview

- FEA is a state owned electricity utility in Fiji and operates on the three major islands - Viti Levu, Vanua Levu & Levuka (Ovalau).
- The 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**.

REPUBLIC OF FIJI

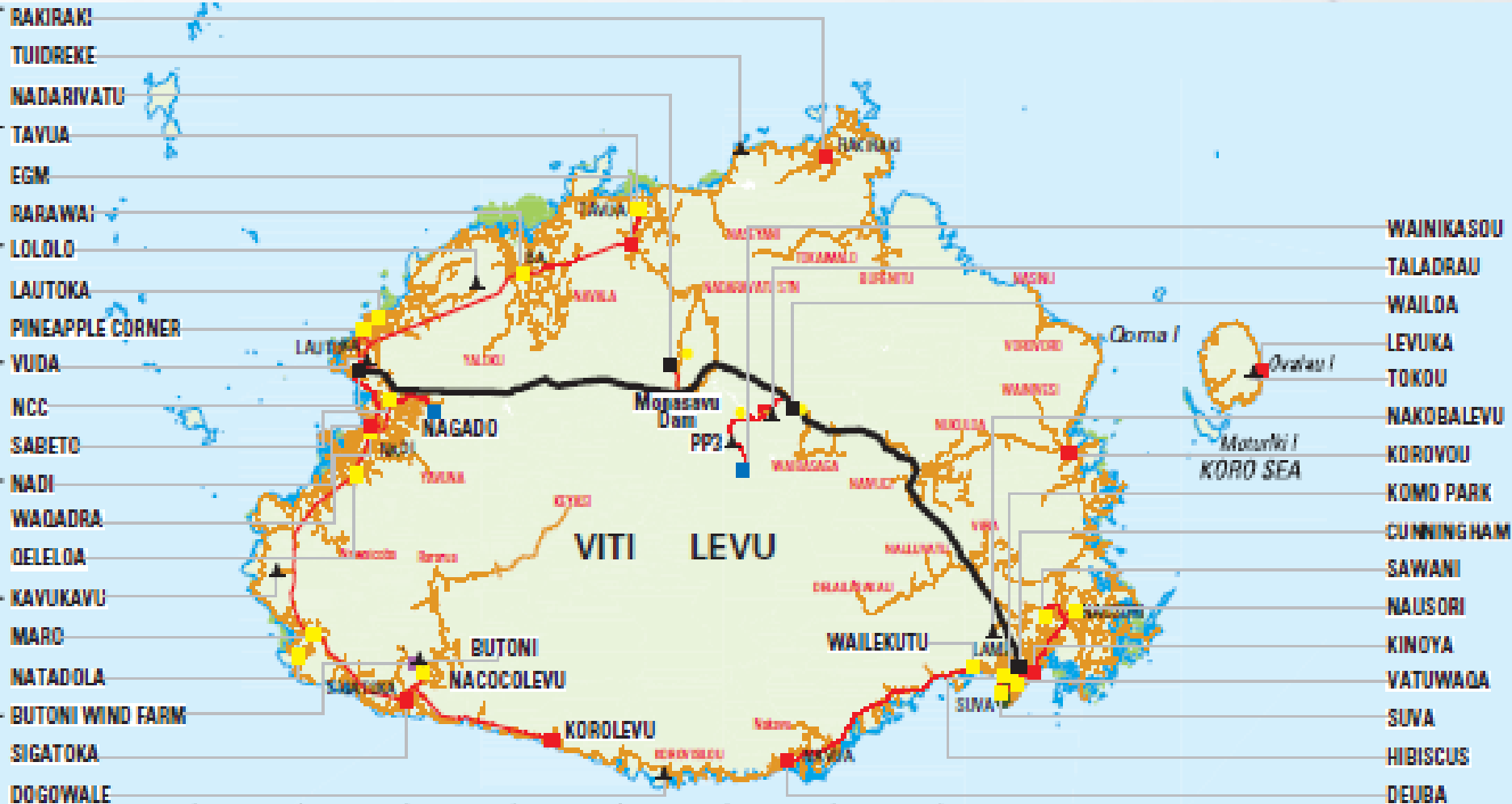
POWER INFRASTRUCTURE



FEA POWER SYSTEM
LEGEND

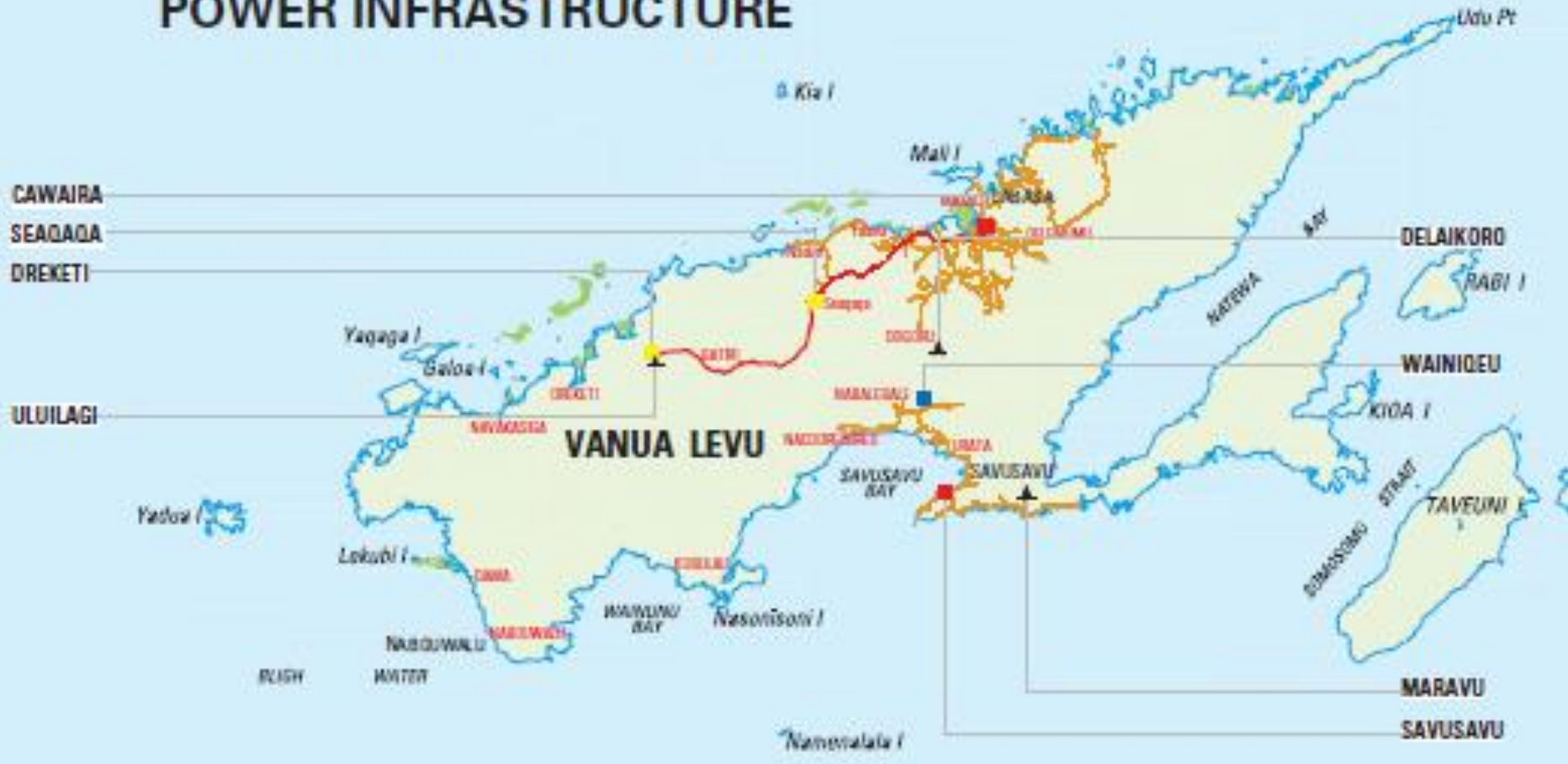
- 132kV Line
- 33kV Line
- 11kV Line Coverage
- 6.6kV Line Coverage
- Diesel Power Station
- Hydro Power Station
- 132kV Substation
- 33kV Substation
- Butoni Wind Farm
- FEA Repeater Station

FEA Strategic Assets – Viti Levu & Ovalau



FEA Strategic Assets – Vanua Levu

POWER INFRASTRUCTURE



Demand & Supply Statistics

Customer Growth - 10.81% - Last 5 Years and growing

	2010	2011	2012	2013	2014 (Dec)	2015 (Mar)
Customer Accs	151,410	155,912	159,017	162,656	167,017	168,446
Annual Growth		2.97%	1.99%	2.29%	2.98%	0.86%
Electrification (Est)				80%	87%	

Peak Demand (PD) & Installed Capacity (IC)

- Viti Levu - 155.54MW (PD); 262.94MW (IC)
- Vanua Levu - 9.52MW (PD); 16.6MW (IC)
- Ovalau - 1.85MW (PD); 2.96MW (IC)
- Renewable - 144.82MW (Wind - 9.72MW; Hydro - 135.1MW)
- Thermal - 118.12 MW

Renewable Energy Schemes

Viti Levu - Existing FEA Schemes

- Monasavu Hydro Electric Scheme - 72MW
- Nadarivatu Hydro Electric Scheme - 40MW
- Wainikasou Hydro Electric Scheme - 6MW
- Nagado Hydro Electric Scheme - 1.40MW
- Butoni Wind Farm - 10MW
- **IPP Schemes with PPA Signed** - Vuda Renewable Energy 18MW and GIMCO Biomass Plant 10MW

Vanua Levu - Existing

- Wainique Hydro Electric Scheme - 0.8MW
- IPP scheme with PPA signed - FSC, Labasa

FEAs Strategies & Plans – Generation

- Develop renewable energy generation hydro schemes thru a PPP model:
 - Qaliwana Upper Wailoa Diversion Hydro Project (Western Division)
 - Potential Output - 44MW & Generation - 206GWh
 - Approx. Cost - US\$265M (Hydropower & Transmission connection)
 - Currently have an Exclusivity arrangement with Hawkins Infrastructure Limited of New Zealand who have been engaged to carry out preliminary investigation and geotechnical drilling to firm up the feasibility and invite financial partners to undertake the development
 - Commercial talks are in the pipeline and exclusivity period ends in March 2016
 - Investor interest has to be channeled to Hawkins and contact is available.

FEAs Strategies & Plans – Generation

- Lower Ba Hydro Project Development (Western Division) is a combination of 3 schemes on the Ba river after the Nadarivatu Hydro Scheme.
 - Potential Output - 49MW & Generation - 214GWh
 - Approx. Cost - US\$324M (3 Hydro Stations & Transmission connection)
 - Currently FEA is talking to European Investment Bank (EIB) to provide a grant to engage a contractor to carry out preliminary investigation and geotechnical drilling to firm up the feasibility
 - Agreements with EIB to be in place by May and work packages released by year end.
 - Development will be ready for construction by 2017. Investment funding is not clear at this stage but FEA would put out an EOI for this development.

FEAs Strategies & Plans – Generation (cont)

- Japan International Cooperation Agency (JICA) study findings:
 - Waivaka (Central Division) Recommended as the top ranked.
 - Potential Output - 32MW & Generation - 67.6GWh
 - Approx. Cost - US\$88.7M (Hydropower & Transmission)
 - FEA has requested the Line Ministry to approach JICA for a grant to carry out preliminary investigation and geotechnical drilling to firm up on feasibility
 - Wailevu (Northern Division)
 - Potential Output - 4MW + 13MW & Generation - 8,783MWh + 49,296MWh
 - Approx. Cost - US\$75.1M (Hydropower & Transmission)

FEAs Strategies & Plans - Transmission

- Long Term - Need to reinforce current 132,000v transmission line to have a coastal loop around Viti Levu

Opportunities in Fiji's Renewable Energy Sector

Demand Growth Forecast to 2020 as per FEAs Power Development Plan

- Independent Power Producers (IPP) Schemes - Potential for the setup of renewable energy plant and feeding into the FEA grid
- FEA is currently evaluating a number of proposals for inclusion
- Potential Sites for inclusion depending on resources:
- Northern Division
 - Savusavu - 1.5MW - 2.0MW
- Eastern Division
 - Ovalau - 1.5MW - 2.5MW
- Central Division
 - Deuba/Naboro - 5MW
 - Suva - 10.MW - 20MW
 - Nausori - 5MW
 - Korovou - 2MW
- Western Division
 - Tavua/Ba - 5MW-10MW

Comments, Questions, Answers & Discussions

Thank You

