RENEWABLE ENERGY IN FIJI: CURRENT STATUS, CHALLENGES & OPPORTUNITIES

DEPARTMENT OF ENERGY

CTCN – LEARNING VISIT

1/09/2026

KOREA

AGENDA

- Role of Fiji Department of Energy
- National Renewable Energy Targets
- Current Energy Landscape
- Main Projects
- Challenges and Opportunities

FIJI - MAP

Welcome to our Friendly Shores & Marinas
GREAT SEA REEF
VANUA LEVU
Nubu
Naduri
Labasa
Natewa Bay
Buca
Rabi
Ringgold Isles
Votua
Bua
SAVU SAVU BAY
Savusavu
Somosomo
Matei
Waiyevu
Qamea
Laucala
Taveuni
Nabouwalu
Yadua Taba
Yasawa
Nacula
Yasawa Group
Yaqela
Naviti
Waya
BLIGH WATER
Rakiraki
Tavua
Vatukoula
Ba
Mamanuca Islands
Mana
VUDA
Lautoka
MALOLO LAILAI
DENARAU
Nadi
VITI LEVU
Natovi
Korovou
Makogai
Wakaya
Ovalau
Levuka
Koro
Namacu
KORO SEA
Batiki
Nairai
Sawaleke
Gau
Nausori
SUVA
Navua
Sigatoka
Coral Coast
Pacific Harbour
Beqa
Vatulele
Astralobe Lagoon
KADAVU PASSAGE
Tavuki
Kadavu
Great Astralobe Reef
Kaibu
Vanua Balavu
Mavana
Lomaloma
Mago
Northern Lau Group
Tuvuca
Tarakua
Cicia
Nayau
Lakeba
Tubou
FIJI ISLANDS
Oneata
Moce
Namuka-i-lau
Moala
Naro
Totoya
Tovu
Kabara
Matuku
Southern Lau Group
Fulaga
Ogea Levu
KEY
Customs, Immigration & Quarantine Clearance
YADUA TABA
16°S
17°S
18°S
19°S
177°E
178°E
179°E
180°E
179°W
N
NE
E
SE
S
SW
W
NW
© Sea Reel

FIJI - DESCRIPTION

- Land Area - 18,274 km2
- Capital – Suva
- Language – Fijian, English, Hindi and Rotuman.
- Population Estimate – 950K.
- Currency – Fiji Dollar (Fj$).
- Time zone - UTC+12 (FJT)

ROLE OF FIJI DEPARTMENT OF ENERGY

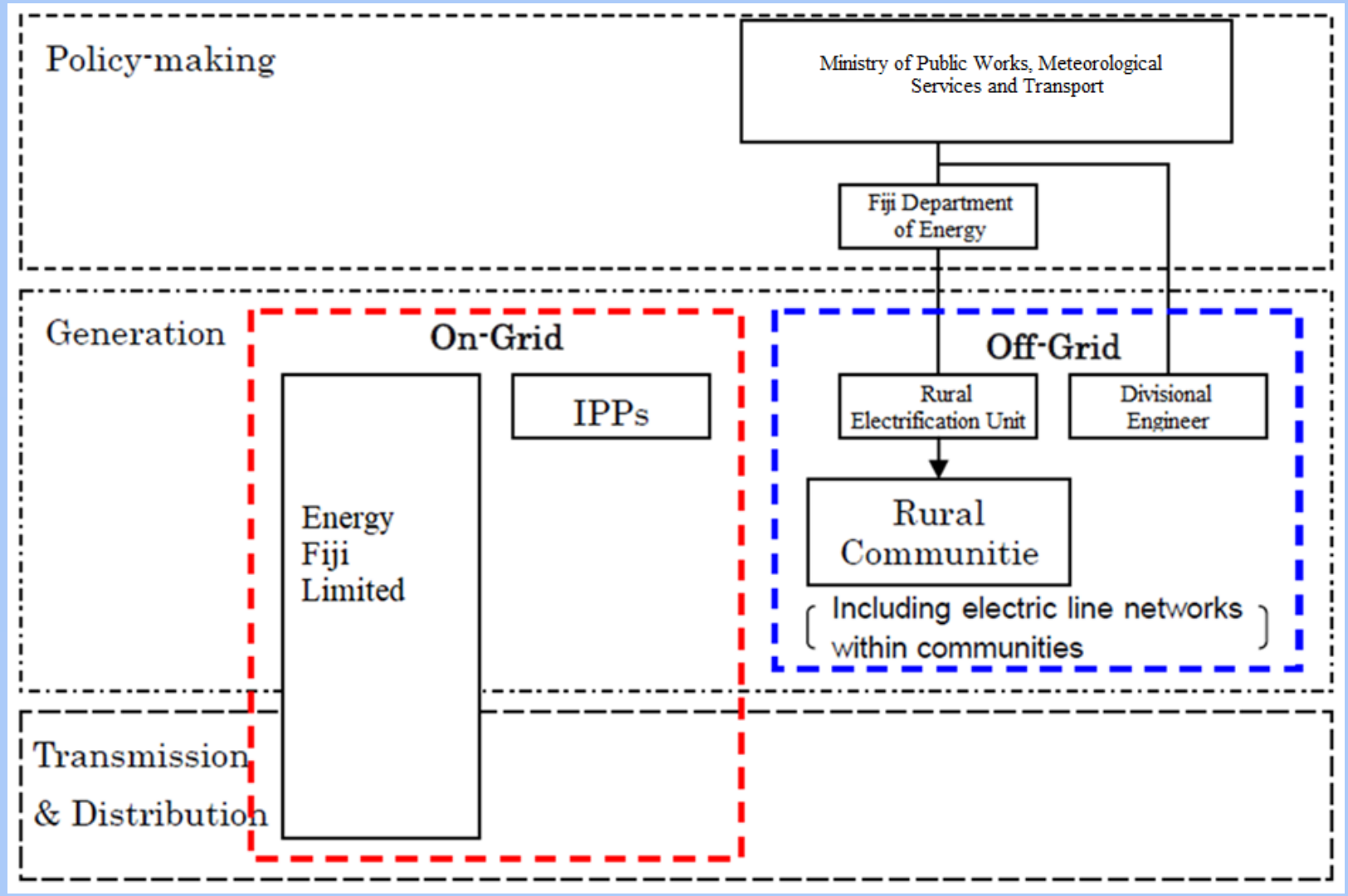
The Department of Energy (DOE) is the lead agency for Fiji's energy sector.

Our mandate encompasses the coordination, planning, and implementation of critical energy projects and policies.

Vision: To achieve a sustainable energy sector in Fiji.

Mission: To create an enabling environment for a sustainable energy sector through effective policy, planning, and project implementation.

Our core functions include: Off-grid electrification, renewable energy assessment, energy policy development, and Demand Side Management.



POLICIES, PLANS AND STRATEGIES

- National Energy Policy 2023 - 2030.
- 5 Year & 20 Year National Development Plan
- Electrification Policy 2022
- Power Development Plan – EFL
- SDG 7 Roadmap
- Climate Change Act 2021
- Electricity Act 2021
- NDC Implementation Roadmap

In Progress

- National Biofuel Policy
- Electrification Master Plan
- Review of the National Development Plan
- Review of the Petroleum Act

KEY TARGETS FOR THE ENERGY SECTOR

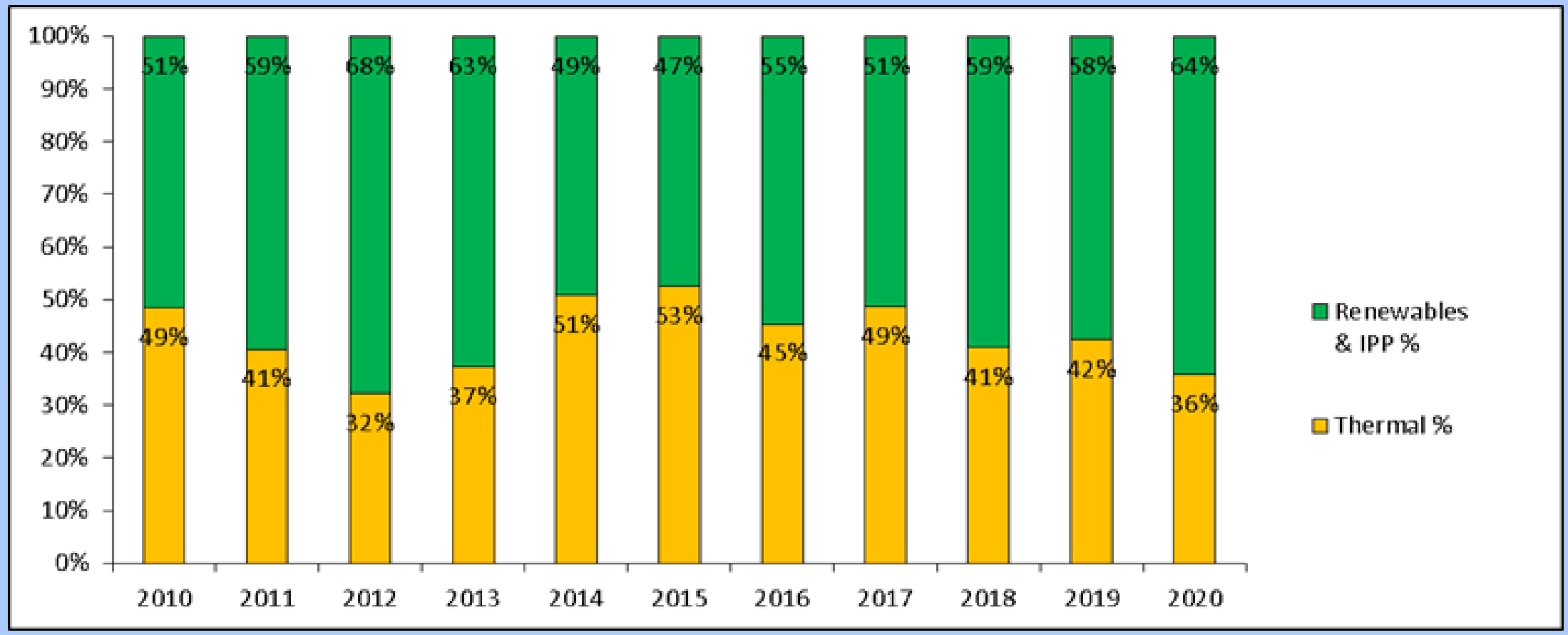
- NDP Targets (5-year and 20 year)
  - Provide 100% electricity access to all Fijians by 2030
  - Increase share of Renewable Energy to 100% by 2030

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

- NDC Targets
  - To reduce 30% of BAU CO2 emissions from the energy sector by 2030.
  - To reach close to 100% Renewable Energy Power Generation (100%) by 2030, reducing an expected 20% of energy sector CO2 emissions under a BAU scenario.
  - To reduce energy sector CO2 emissions by 10% through energy efficiency improvements economy wide, implicitly in the transport, industry, and electricity demand-side sub sectors.


CURRENT ENERGY
LANDSCAPE

CURRENT ENERGY MIX

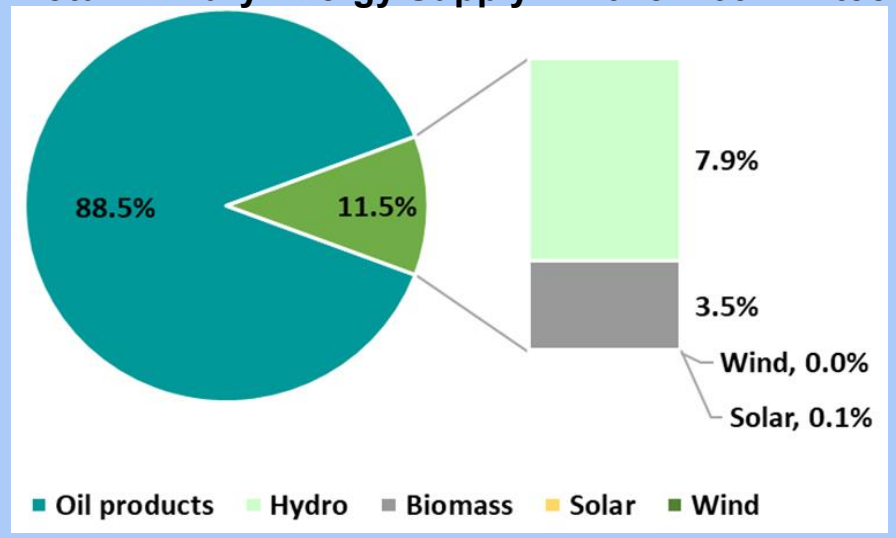


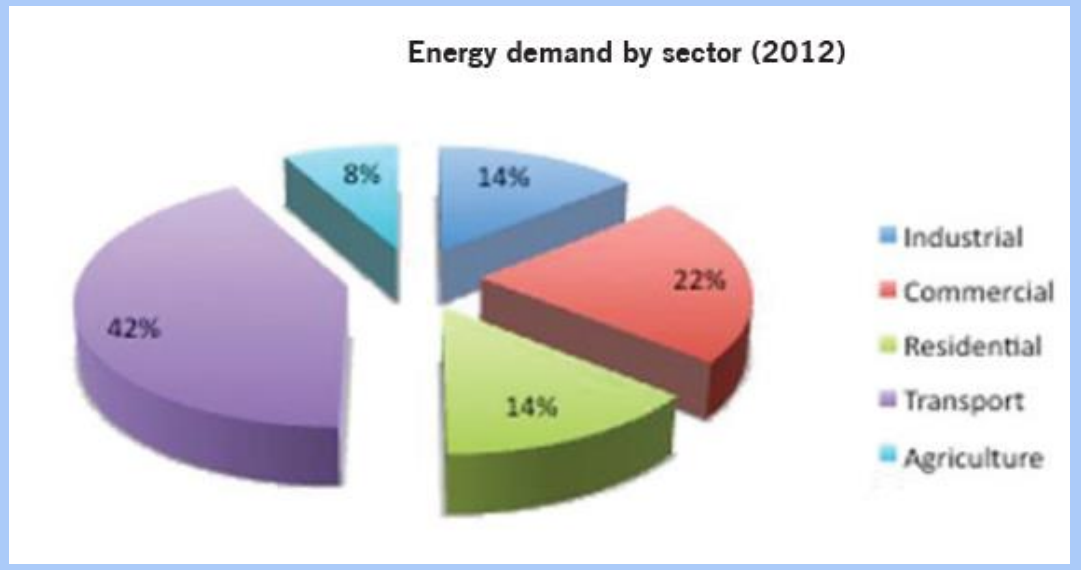
FIJI'S ENERGY DEMAND

Fiji's energy supply is diversified across three main forms:

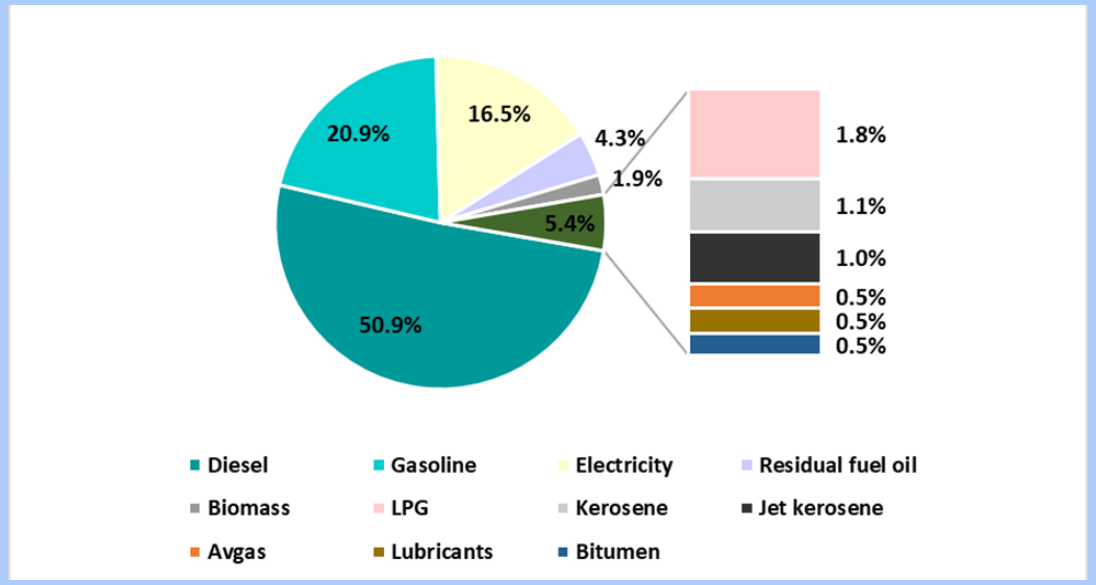
- **Biomass:** Dominates rural residential use (cooking).
- **Fossil Fuels:** Imported for transport and power generation.
- **Renewable Electricity:** The grid is largely powered by hydropower, with support from biomass, wind, and solar.

Total Primary Energy Supply in 2018 – 631.2 ktoe





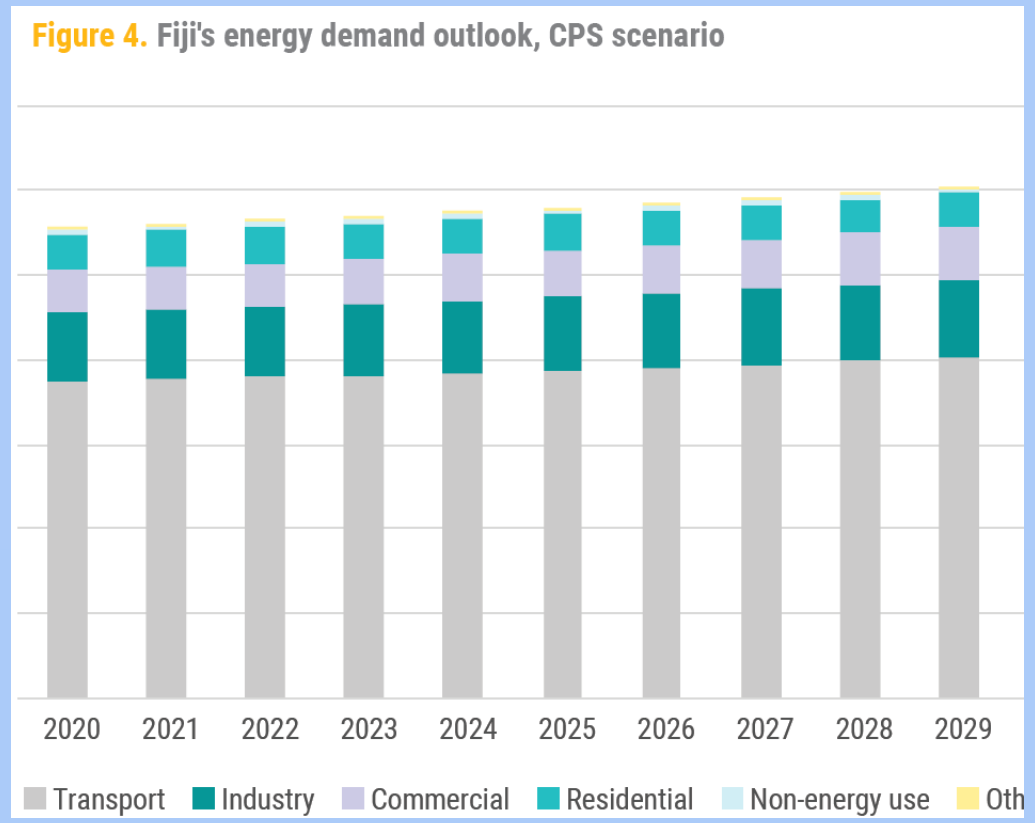
Total Final Energy Consumption in 2018 – 549.6 ktoe



ENERGY CONSUMPTION TRENDS TO 2030

Fiji's total energy demand is projected to grow by over 10% by 2030, but trends vary significantly by sector.

- Transportation will continue to dominate the energy landscape.
- Commercial and Industrial projected demand shows strong growth.
- Residential demand is expected to decline due to efficiency improvements.



Sector	2018	2030 (Projected)	Trend
Transport	374.3 ktoe	407.3 ktoe	▲ Increasing
Industry	78.2 ktoe	93.5 ktoe	▲ Increasing
Commercial	46.5 ktoe	63.3 ktoe	▲ Increasing
Residential	44.1 ktoe	39.9 ktoe	▼ Decreasing

CHALLENGES AND OPPORTUNITIES.

CHALLENGES

- **CLIMATE CHANGE**
- **Problem:** Dependence on fossil fuels is both a major cause of climate change. The energy sector is facing pressure to decarbonize rapidly.
- **Pathway to Decarbonize:** Accelerate the transition to renewables through strategic investments in innovation and resilient infrastructure.
- **ENERGY SECURITY**
- **Problem:** Global instability and concentrated supply sources jeopardize reliable and affordable energy access.
- **Pathway to Resilience:** Strengthen energy independence by diversifying sources, investing in domestic capacity, and improving grid efficiency and storage.

CHALLENGES

- **GEOPOLITICAL FACTORS**
- **Problem:** Reliance on energy imports creates vulnerability to price shocks and supply disruptions caused by international conflicts or instability.
- **Pathway to Security:** Enhance energy security through greater energy independence and diversified supply agreements.
- **ENERGY AFFORDABILITY**
- **Problem:** Rising energy costs strain household finances and increase the cost of doing business.
- **Pathway to Equity:** Implement supportive policies, incentives for efficiency, and transition to stable, low-cost renewable energy.

CHALLENGES

ENERGY ACCESSIBILITY

- **Problem:** Remote and underdeveloped regions, including parts of Fiji, still lack reliable and affordable energy.
- **Pathway to Access:** Bridge the access gap by investing in modern infrastructure, rural electrification, and decentralized renewable systems like mini-grids.
- **Key Enabler:** Success depends on international collaboration and targeted financial support.

OPPORTUNITIES

- Fiji's abundant sunshine presents a major opportunity for clean energy generation.
- **Utility-Scale Solar:** Develop large solar farms to supply clean, stable power directly to the main grid.
- **Distributed Rooftop Solar:** Promote solar panel installations on homes and businesses to reduce grid demand and empower consumers.
- **Community Mini-Grids:** Power remote communities with reliable, independent solar-hybrid mini-grids.
- **Agricultural Applications:** Use solar-powered water pumps to boost irrigation efficiency and increase farm productivity.

OPPORTUNITIES

- **HYDROELECTRIC ENERGY**
- **Small-to-Medium Scale Plants:** Develop new hydropower plants, prioritizing run-of-the-river designs for lower environmental impact.
- **Community Mini-Grids:** Use small hydro plants to provide reliable, renewable power to remote communities off the main grid.
- **WIND ENERGY**
- **Utility-Scale Wind Farms:** Capitalize on consistent wind patterns in specific regions to build wind farms for grid electricity.
- **Localized Turbines:** Deploy small-scale turbines for direct power generation in remote, windy areas, enhancing energy independence.

OPPORTUNITIES

- **GEOTHERMAL ENERGY**
- **Power Generation:** Identify viable geothermal resources through surveys to develop power plants for baseload, renewable electricity.
- **Direct Heating:** Utilize geothermal heat directly for applications in tourism (spas, resorts) and agriculture, reducing reliance on fossil fuels.

ADDITIONAL OPPORTUNITIES AND CONSIDERATIONS

- **CROSS-CUTTING OPPORTUNITIES**
- **Advanced Energy Storage:** Deploy battery systems to store surplus renewable energy, ensuring a stable power supply day and night.
- **Grid Modernization:** Upgrade the national grid to be smarter and more flexible, seamlessly integrating variable renewable sources like solar and wind.
- **Strategic Investment:** Attract foreign direct investment and forge international partnerships to accelerate project development and share expertise.
- **Workforce Development:** Establish specialized training programs to build a local skilled workforce for the growing renewable energy sector

INSTALLED OFF-GRID RENEWABLE ENERGY PROJECTS (APPROX. 6MW)

Project Name	Location	System Size
Namara Solar Hybrid System	Namara village, Kadavu	30kW
Tukavesi Solar Hybrid System	Tukavesi village, Cakaudrove, Vanua Levu	60kW
Solevu High School – Solar Hybrid	Solevu High School, Bua, Vanua Levu	30kW
Yasawa Secondary School – Solar Hybrid	Naviti, Yasawa	30kW
Nakoro village – Solar Hybrid	Navosa	50kW
Vio island – Solar Hybrid	Off Lautoka wharf	5.88kW
Bukuya Hydro	Magodro, Ba	100 kW
Buca Hydro	Cakaudrove	30kW
Muana Hydro	Tunuloa, Cakaudrove	40kW
Kadavu – Koro Hydro	Naceva, Kadavu	20kW
Nabukelevu and Dakuibeqa Health Centers - Solar	Kadavu and Beqa	16.6kW
Mua Solar PV Plant	Mua, Taveuni	1.5MW
Stand Alone Solar Home Systems (SHS)	Maritime Islands	~ 4.11MW

ON-GOING DEVELOPMENT PARTNER PROJECTS

PARTNERSHIP PROGRAMME	PROJECT FUNDED
KOICA	4 MW Agro-Photovoltaic system in Ovalau
United Arab Emirates (UAE) and New Zealand Government (NZG)	LAKARO Project (Lakeba, Kadavu, Rotuma)
United Nations Industrial Development Organizations (UNIDO)	1. Solar Grid Connect System for Nausori Market 2. Solar Hybrid System for Lomanikaya Village, Vatulele
Asian Development Bank (ADB)	1. Rehabilitation of the Buca Project 2. Solar Hybrid System for Tiliva Village
Fiji Rural Electrification Fund (FREF) w/t UNDP & UK, AUS, NZ	1. Vio Island Repairs + Upgrade 2. 1st Stage Tender (3 Sites) – Kioa, Yacata, Yadrana

PLANNED ENERGY FIJI LIMITED (EFL) PROJECTS

No	Project	Anticipated Output	Estimated cost (hydro+ transmission)
1	Qaliwana Hydro Project	17.0MW/ 39GWh/annum	US$90 M
2	Wailoa Downstream Hydro project	28.6MW/ 135.7 GWh/annum	US$277 M
3	Lower Ba hydro project	49.0MW/ 214GWh/annum	US$324 M
4	Waivaka hydro project	32.0MW/ 67.6GWh/annum	US$ 88M
5	Wailevu hydro project	17.0MW/ 58.08GWh/annum	US$ 75.1M
6	Qeleloa, Ba & Tavua	15MW/65.7GWh/ annum	-


Rotuma


Solevu


Daviqele
Health Centre


Tukavesi


Yasawa

CONCLUSION

A Strategic Pathway for Fiji's Energy Sector
Fiji's energy transition is at a critical juncture.
This presentation underscores a clear balance of challenges and opportunities.

Challenges to Address

- **Climate Change & Security:** Reliance on imported fuels creates vulnerability.
- **Affordability & Access:** Ensuring equitable and cost-effective energy for all.
- **Grid Integration:** Modernizing systems to handle renewable input.

Opportunities to Seize

- **Resource:** Abundant solar, hydro, wind, and geothermal potential.
- **Technology & Infrastructure:** Energy storage, smart grids, and decentralized solutions.
- **Investment & Growth:** Attracting partnerships for project funding and skills development.

The way forward requires a coordinated strategy that turns these opportunities into concrete actions, ensuring a sustainable and secure energy future.


THANK YOU