



COURSE: ENERGY POLICY (A)

COUNTRY REPORT – FIJI



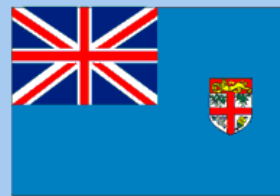
Vishal Anand Prasad
Fiji Department of Energy
June, 2022



GENERAL INFORMATION

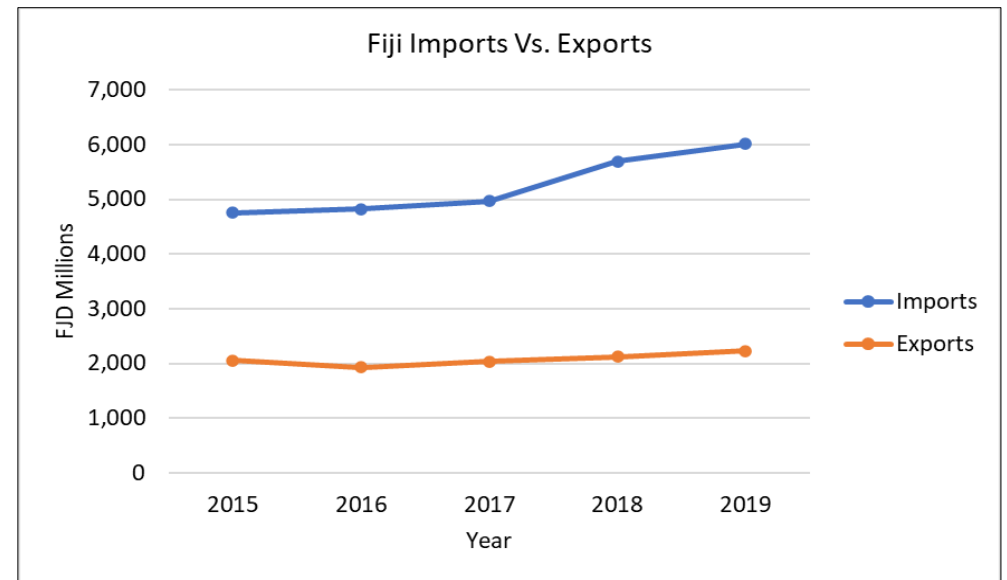
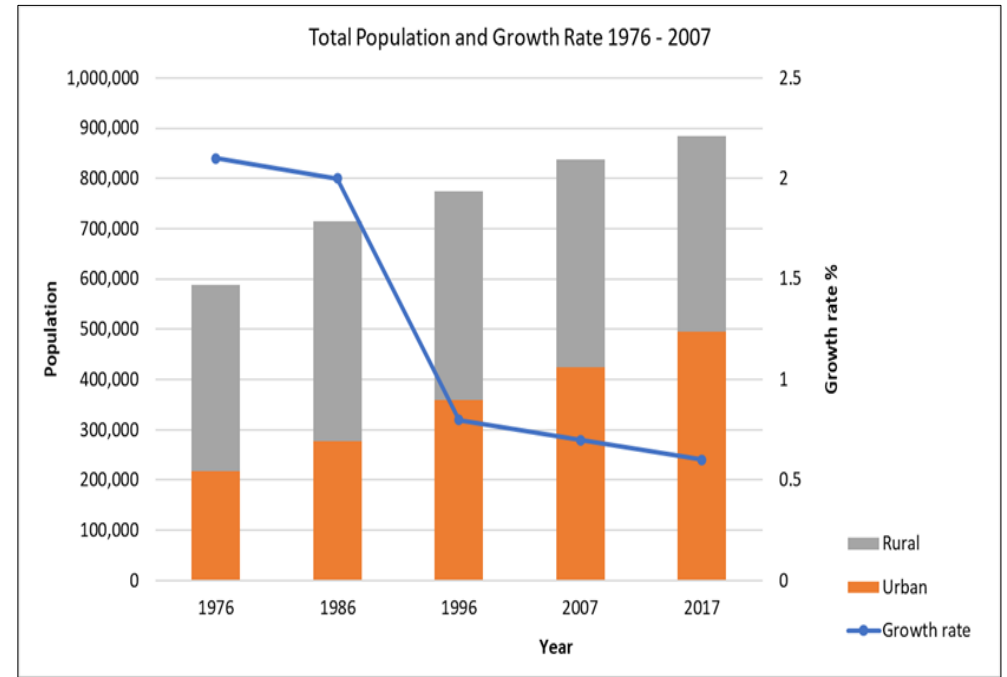
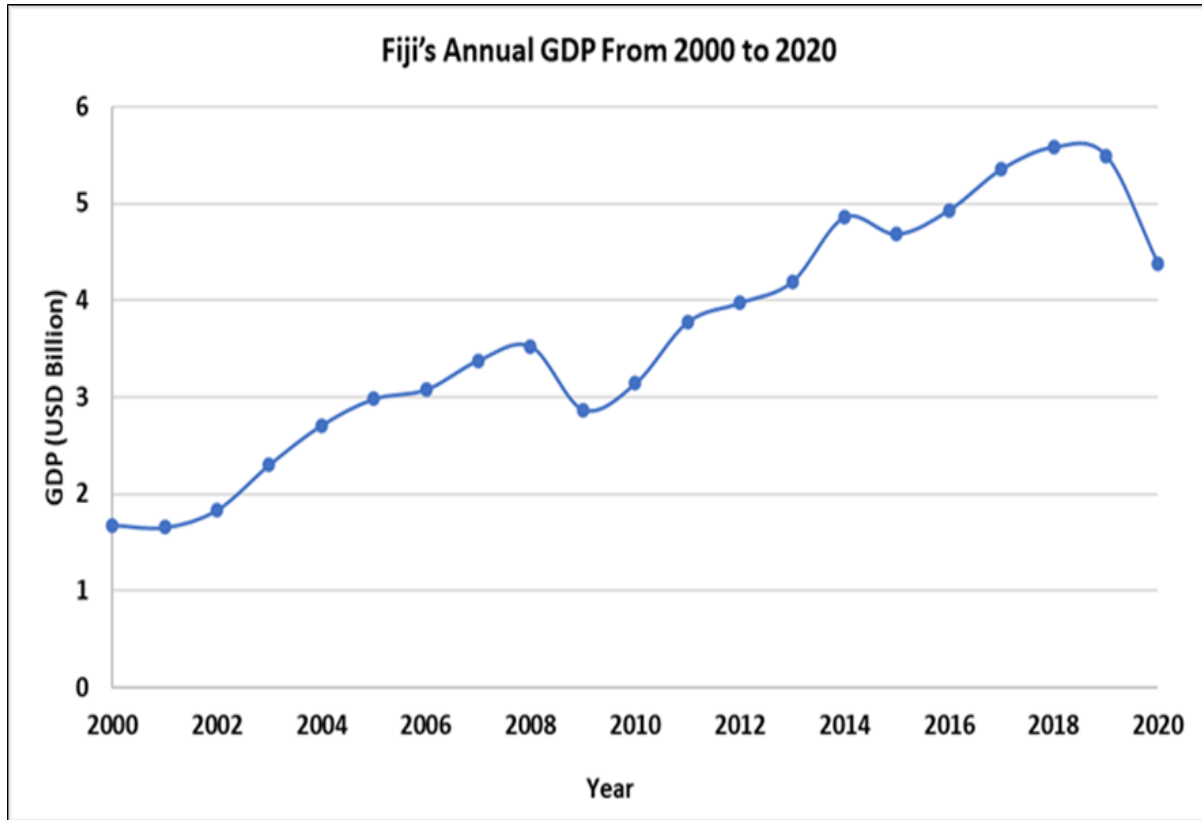
- **Independence:** 10 October 1970
- **Population:** 884,887
- **No. of Households (2017):** 191,910
- **Land Area:** 18,725 km²
- **Exclusive economic zone:** 1.3 million km²
- **Avg. temperature** 26°C
- **Avg. annual rainfall** 1800 to 2600 mm
- **Language:** English, Fijian, Hindi
- **GDP per capita (2019):** \$6,220
- **Main exports:** sugar, garments, gold, timber, fish, molasses, mineral water and coconut oil

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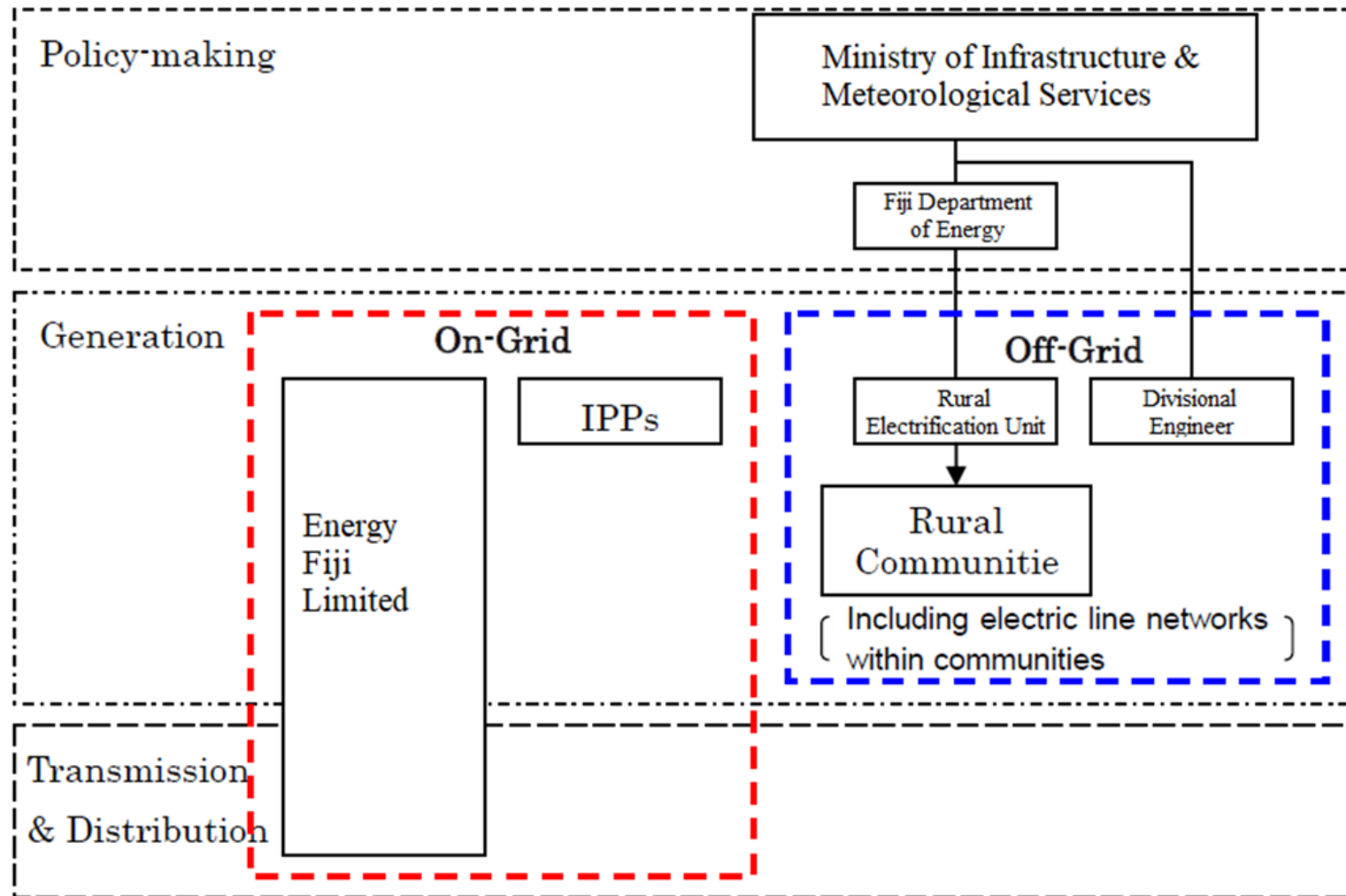


FIJI

Economic Indicators



Organizational Structure



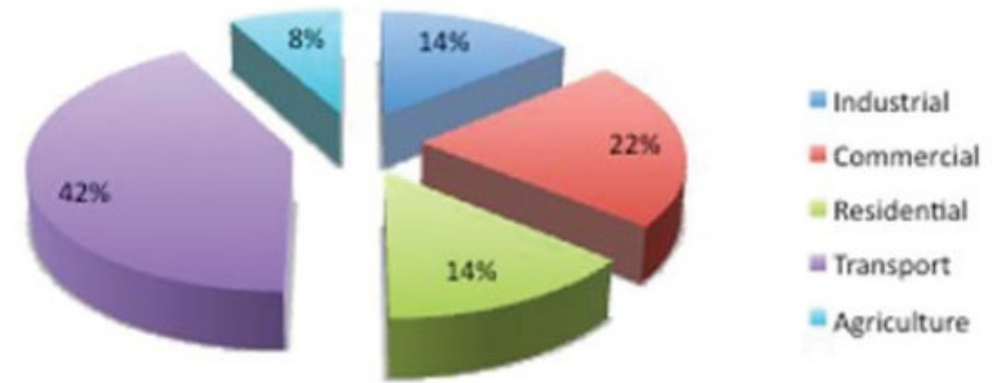
Fiji's Energy Demand

Source: Government of Fiji

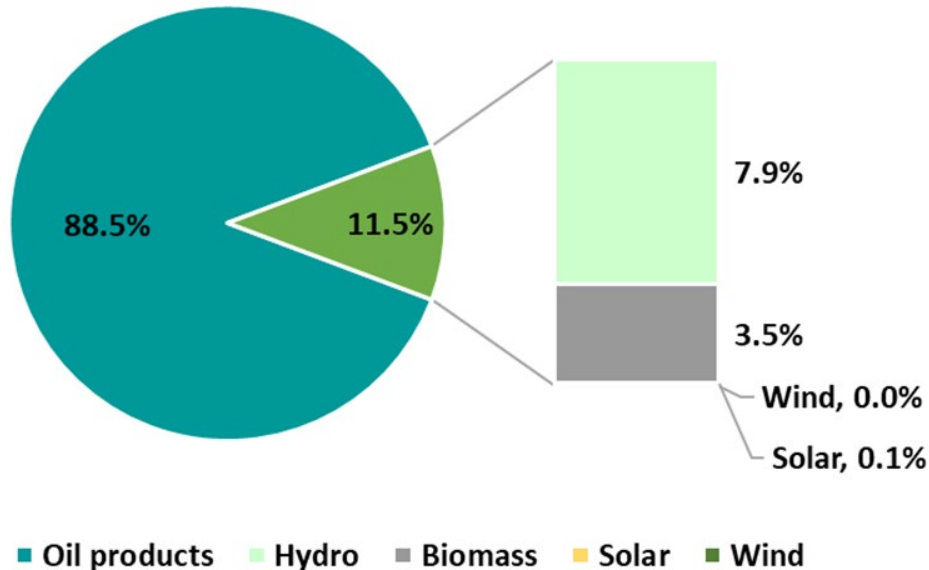
Energy in Fiji is supplied in three main forms:

- i) biomass/wood for cooking in rural areas and to a lesser extent for power co-generation in the wood and sugar industries;
- ii) as imported fossil fuels and
- iii) as electricity, of which a significant share is generated from hydropower with smaller contributions from biomass, wind and solar energy.

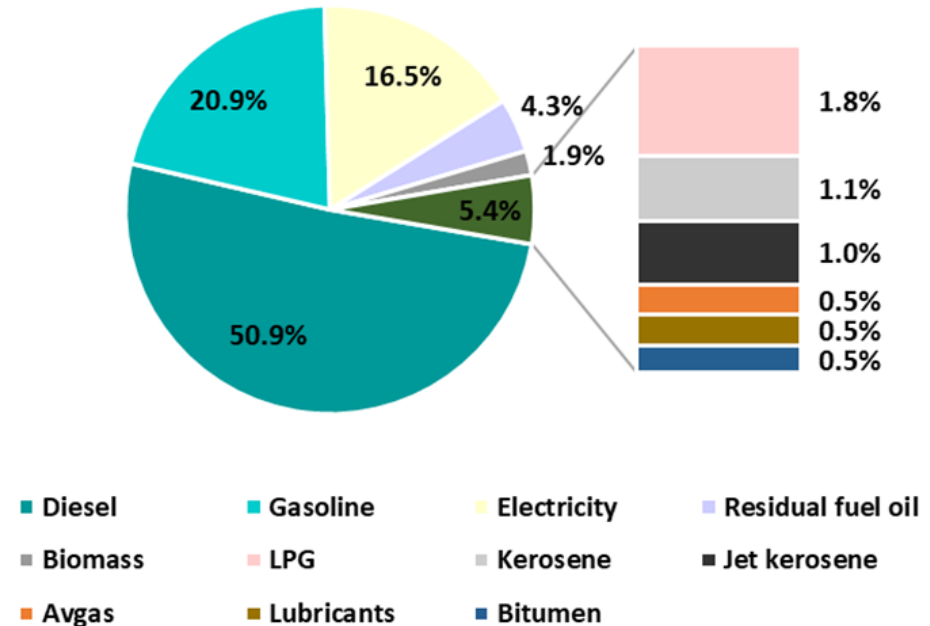
Energy demand by sector (2012)



Total Primary Energy Supply in 2018 – 631.2 ktoe



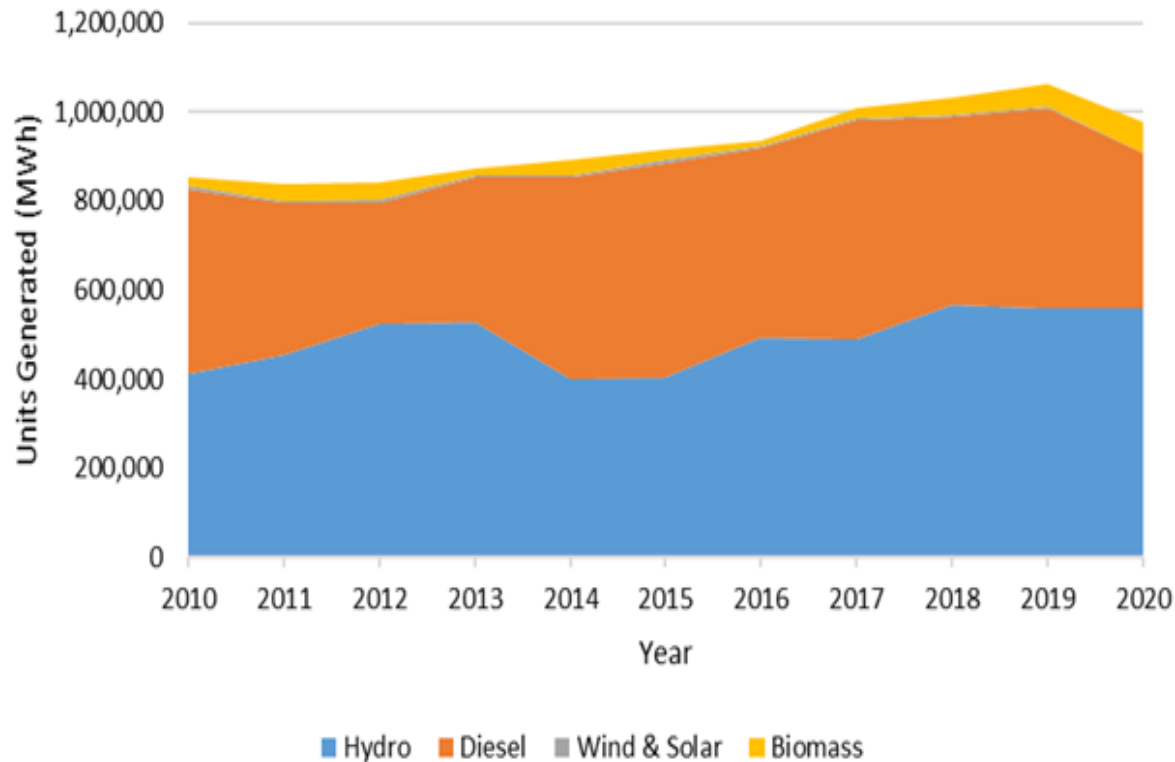
Total Final Energy Consumption in 2018 – 549.6 ktoe



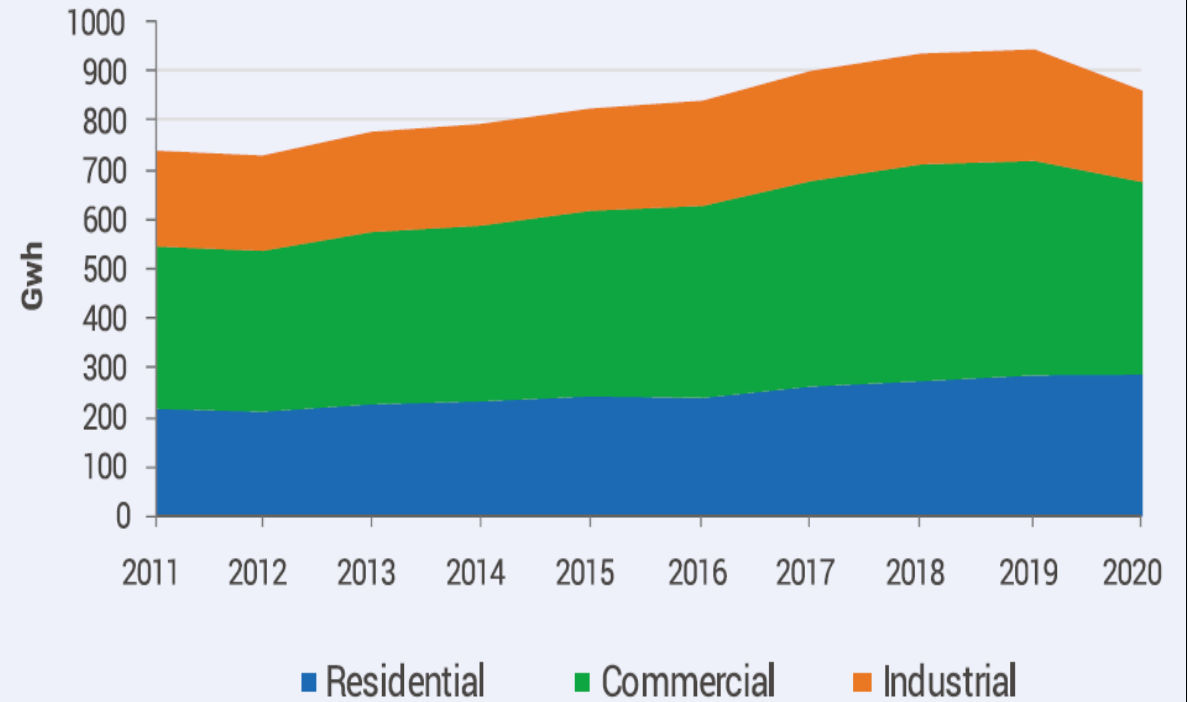
Electricity Supply and Access

Source: EFL Annual Report, 2020

EFL Generation From 2010 to 2020

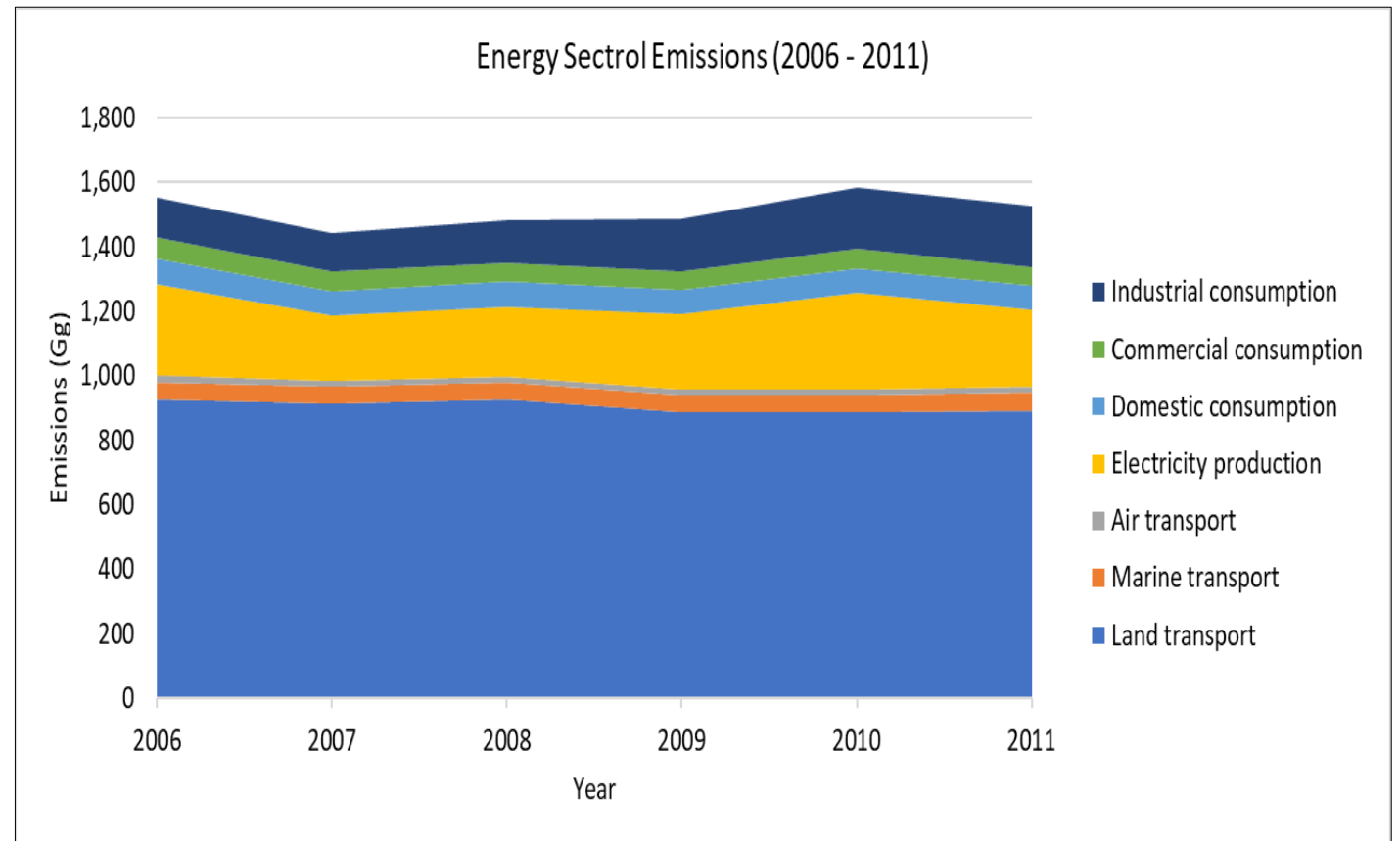
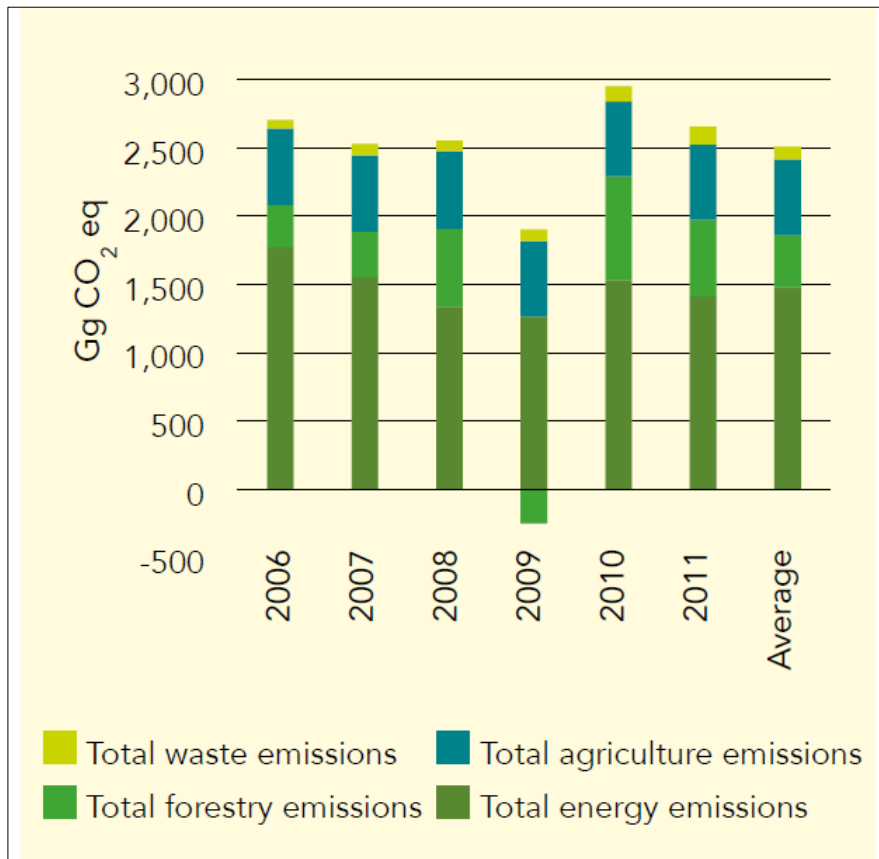


Electricity Sales Volume



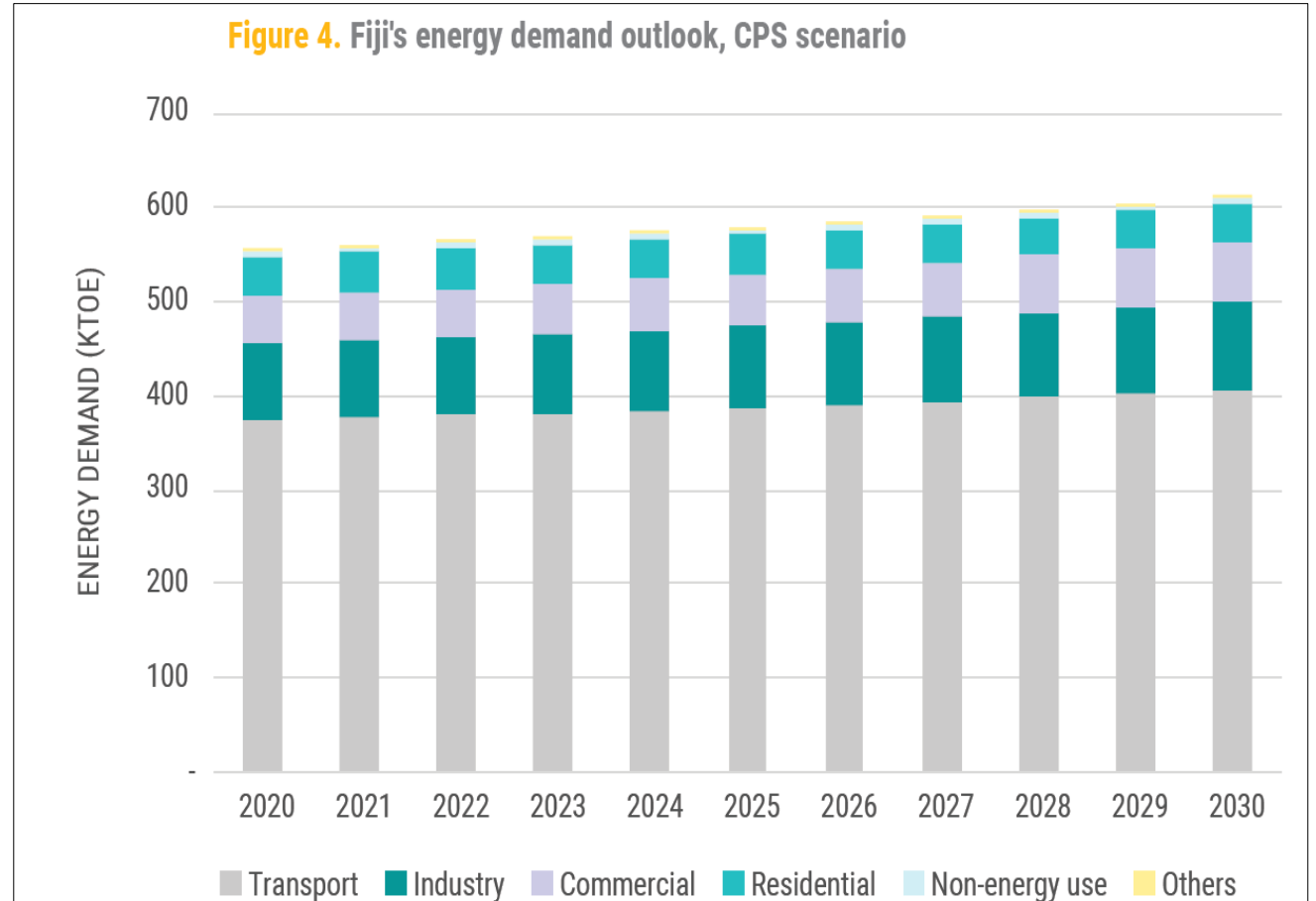
CO₂ Emissions

- Overall emissions were estimated to be around 2500 Gg p.a. (2.5 million tons p.a.).
- Fiji's per capita emission is estimated to be 2.8 tons, or around 40 per cent of the world average for the reporting period. In absolute terms, Fiji's total CO₂ eq. emissions were around 0.006 per cent of world emissions.
- Energy Sector contributes to 60% of emissions.



Outlook of Energy Demand

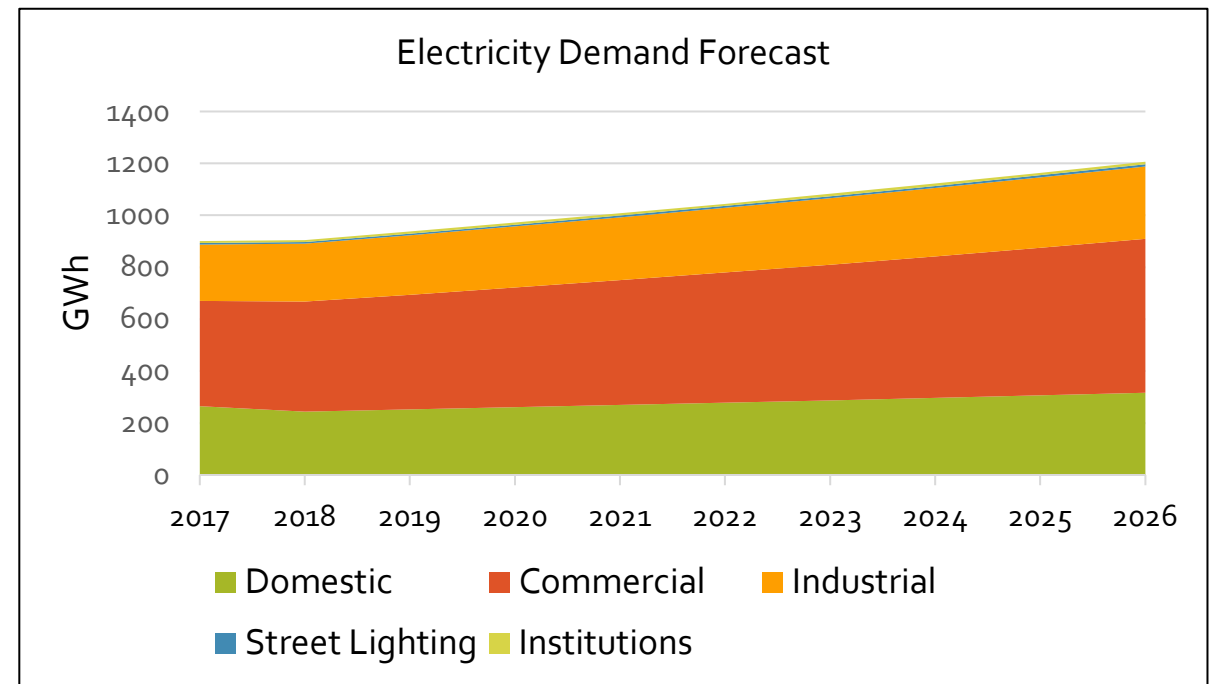
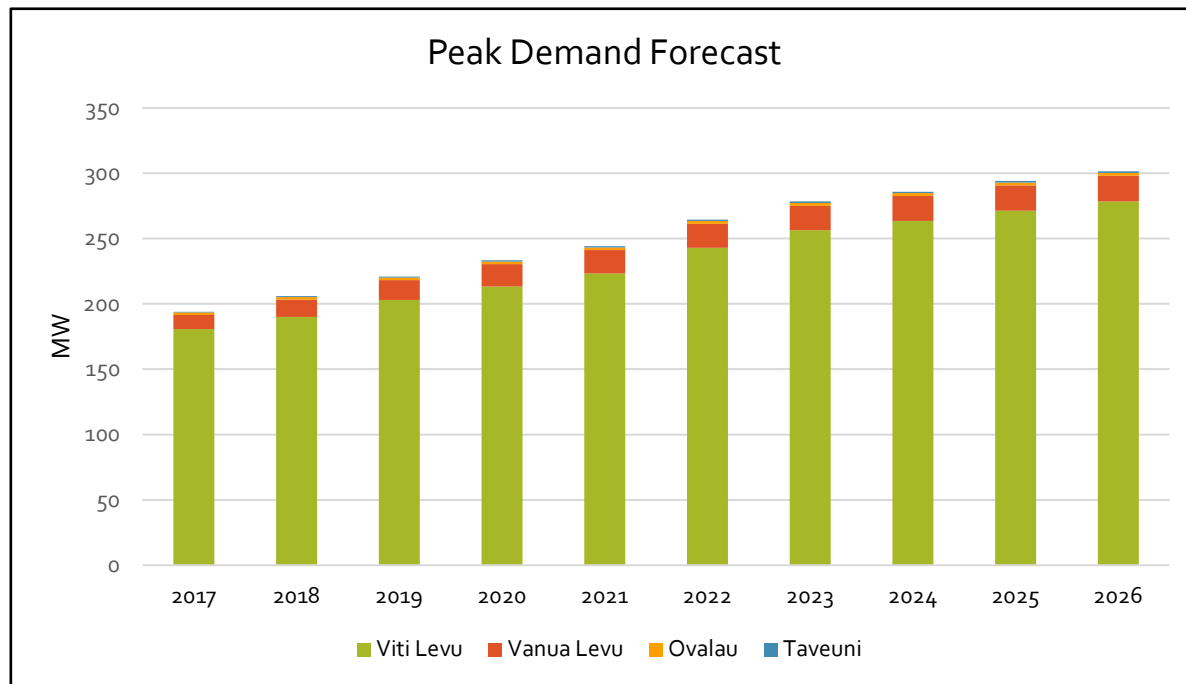
- In the current policy settings, TFEC is forecast to increase from 549.6 ktoe in 2018 to 610.5 ktoe in 2030.
- The transport sector's energy demand will continue to dominate Fiji's TFEC, and is projected to increase from 374.3 ktoe in 2018 to 407.3 ktoe in 2030.
- Residential demand is projected to decrease to 39.9 ktoe by 2030, compared with 44.1 ktoe in 2018. The projected decrease in energy demand is attributable to the phasing out of unclean and inefficient cooking technologies.
- Commercial sector demand is projected to increase from 46.5 ktoe in 2018 to 63.3 ktoe in 2030
- Energy demand in the industry sector is expected to grow from 78.2 ktoe in 2018 to 93.5 ktoe in 2030



Region Wise Electricity Forecast Peak Demand

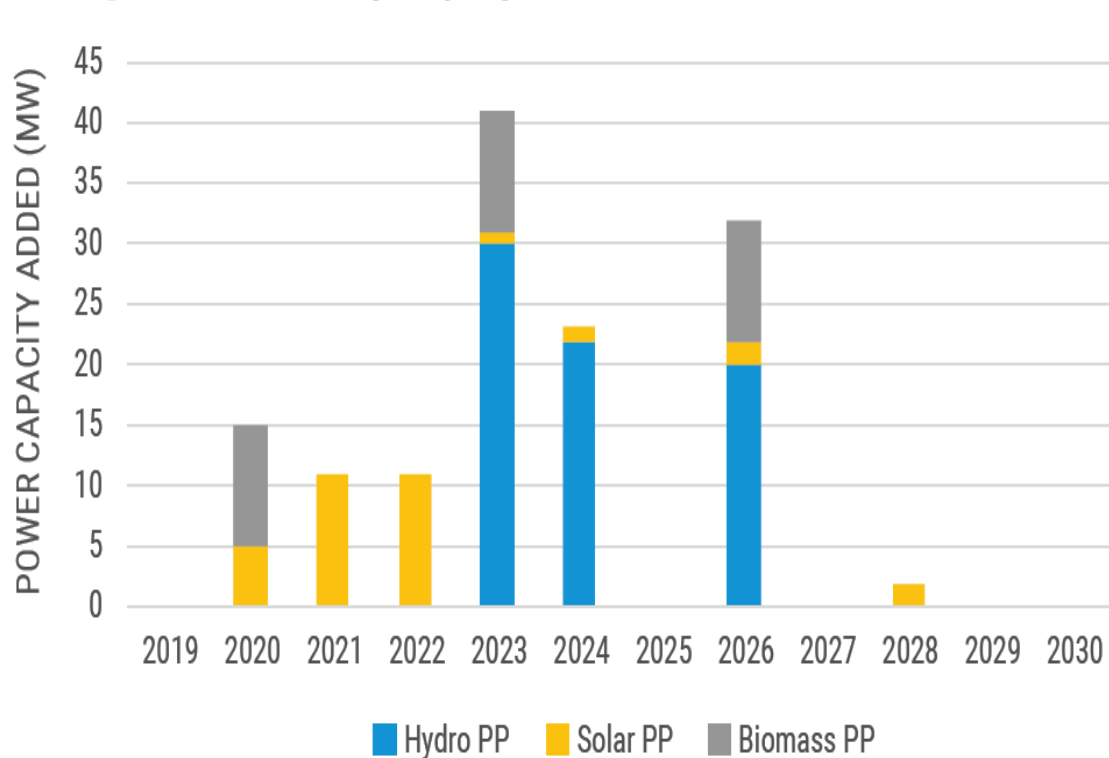
Year	Forecast peak demand for VLIS (MW)	VLIS bulk load + loss (MW)	Total VLIS peak demand (MW)	Forecast peak demand for Vanua Levu (MW)	Vanua Levu bulk load + loss (MW)	Total Vanua Levu peak demand (MW)	Forecast peak demand for Ovalau (MW)	Forecast peak demand for Taveuni (MW)	Total FEA peak load without bulk load (MW)	Total FEA peak load with bulk load (MW)
	A	B	F=A+B	C	D	G=C+D	E	H	A+C+E+H	E+F+G+H
2017	176	4.6	180.6	10.6	0.27	10.87	1.84	0.7	189.14	194.01
2018	180	10.1	190.1	10.9	2.31	13.21	1.88	0.77	193.55	205.96
2019	185	17.9	202.9	11.2	4.1	15.3	1.93	0.83	198.96	220.96
2020	189	24.2	213.2	11.5	5.77	17.27	1.97	0.9	203.37	233.34
2021	195	28.4	223.4	11.8	5.97	17.77	2.02	0.97	209.79	244.16
2022	201	42	243	12.1	6.18	18.28	2.07	1.03	216.2	264.38
2023	207	49.4	256.4	12.4	6.27	18.67	2.12	1.1	222.62	278.29
2024	213	50.5	263.5	12.7	6.27	18.97	2.18	1.18	229.06	285.83
2025	220	51.3	271.3	13	6.27	19.27	2.23	1.25	236.48	294.05
2026	227	51.3	278.3	13.3	6.27	19.57	2.29	1.32	243.91	301.48

Source: EFL PDP, 2017



Potential renewable energy projects

Figure 1. Planned capacity expansion, 2020-2030



Hydro
(80 MW)

1. 28MW Qaliwana Upper Wailoa Hydro power plant (under feasibility study)
2. 32MW Hydro power plant in Namosi including a 132kV transmission line to Suva
3. 20MW Lower Ba Hydro power plant (under feasibility study)

Biomass
(10 MW)

1. 10MW Biomass power plant in Naboro (pending final feasibility study)

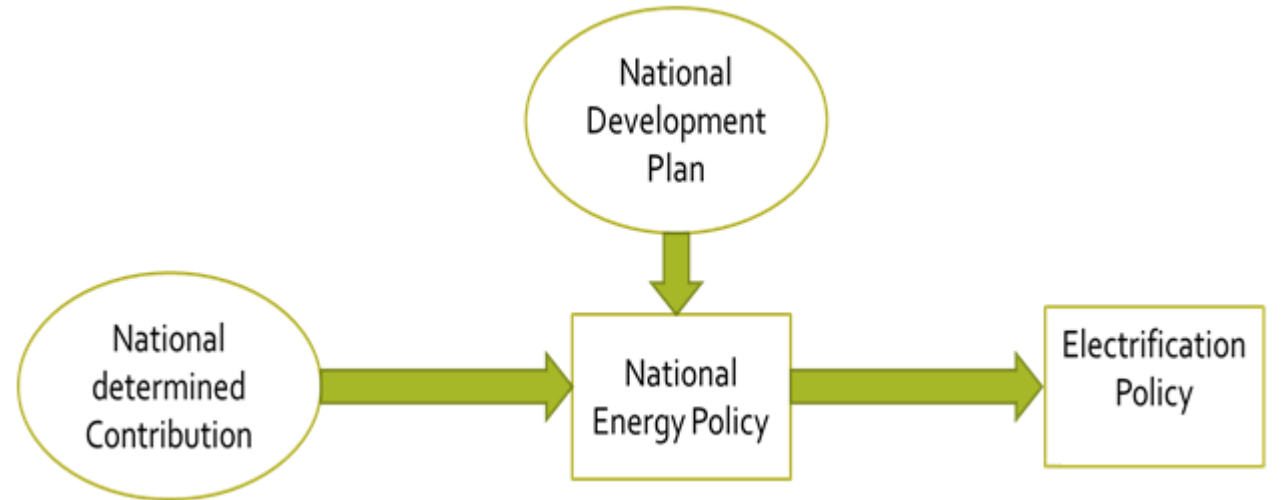
Solar
(15 MW)

1. 5MW Solar PV power plant expected at Qeleloa in Nadi;
2. 5MW Solar PV power plant expected in Ba;
3. 5MW Solar PV power plant expected in Tavua

Policy Framework

5 key Policy Pillars:

- 1. Energy Security and Resilience** -upholding safety standards, managing fuel costs, reducing dependency on imported fuels, improving contingency measures in the event of disruption, and minimizing vulnerabilities to climate and disaster risks within Fiji's energy systems and services.
- 2. Energy Access and Equity** - ensure that 100% of the population has access to affordable, reliable, safe, and clean energy services.
- 3. Energy Sustainability** - targets and promotes the uptake of innovative financing solutions to scale up renewable deployment in Fiji and promotes initiatives to reduce national emissions and reduce the impacts of the energy sector on the local environment.
- 4. Energy Efficiency** - introduction of new standards to help manage demand and sets out key objectives for improving supply-side efficiency.
- 5. Energy Governance** - improving the enabling environment for the safe and efficient transition and development of Fiji's energy sector through objectives that support improved oversight, coordination, and policy coherence



	2015	2021	2026	2031	2036
Inclusive Socio-economic Development					
Access to electricity (% of population) (SDG 7.1)	90	100	100	100	100
Percentage of population with primary reliance on wood fuels for cooking (%)	18	12	6	<1	0
Energy intensity (consumption of imported fuel per unit of GDP in MJ/FJD) (SDG 7.3)	2.89	2.86		2.73	
Energy intensity (power consumption per unit of GDP in kWh/FJD) (SDG 7.3)	0.219	0.215		0.209	
Renewable energy share in electricity generation (%) (SDG 7.2)	67	81	90	99	100
Renewable energy share in total energy consumption (%) (SDG 7.2)	13	18		25	

Challenges in the Energy Sector and Policy Development

- Electricity Access and Rural Electrification

- Having a robust tariff collection mechanism;
- Having an effective maintenance mechanism for rural electrification;
- Ensuring rural electrification projects are climate resilient; and
- Lack of RESCOs available with relevant expertise locally;
- Having available funding for rural electrification and grid extension projects.

- Renewable grid power supply

- Limited natural resources data for large utility scale renewable energy projects;
- Funding for implementation;
- Limited expertise available on renewables;
- Access to emerging technologies, and;
- Grid infrastructure adequacy for RE penetration

- Policy Development

- Coordination of the various institutions with responsibilities in the energy sector has traditionally been a key challenge of sector governance and implementation of the previous National Energy Policy.
- Effective sharing and management of energy information and data is another serious challenge for sector governance.
- Lack of local policy development experts for the energy sector

Subjects I Would like to Learn....

1. The energy policy development process, best approach for implementation and evaluation.
2. Lessons learnt and challenges faced by Japan from their energy policy design and implementation.
3. Insights in methodology used for collecting and analyzing energy statistics data
4. Energy modeling through constructing pragmatic energy policy scenarios.

Thank you for your
attention!