

Tuvalu

Asia & Pacific

Ease of doing Solar classification



Influencer

Electricity Consumption in kWh/capita (2020)

Not available

Average PVout in kWh/kWp/day (2020)

4.3

Cumulative Solar Capacity in MW (2021)

2.3

Getting Electricity Score (2020)

Not available

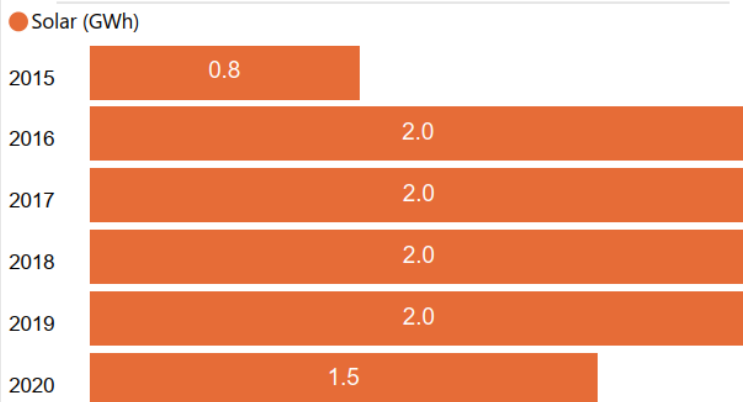
NDC Target by 2025

Net zero

Human Development Index (2021)

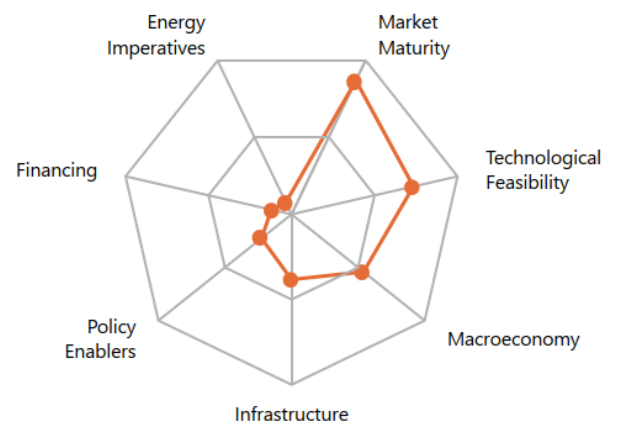
0.6

Renewable Energy Generation by Source

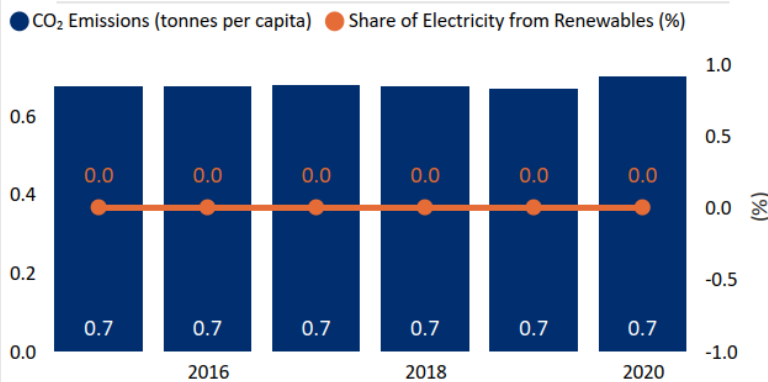


Non Solar RE includes Wind and Hydro;

Performance against 7 Drivers



CO₂ Emissions vs Electricity share from Renewables

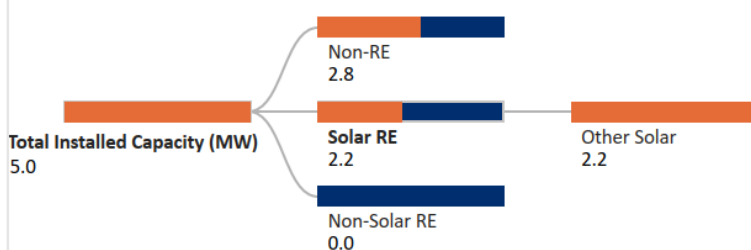


Fiscal Incentives & Public Financing for Renewables (2020)

Investment or production tax credits?
No

Public investment, loans, grants, capital subsidies or rebates?
No

Installed Capacity by Source (2019)



Non-Solar RE: Wind, Hydro, Biomass, Geothermal & Marine;

Non-RE: Coal, Natural Gas, Nuclear, Oil, etc.;

Other Solar: Utility Scale Solar, Rooftop etc.;

Data not available for other Solar RE segments;

Support for Renewables (2020)

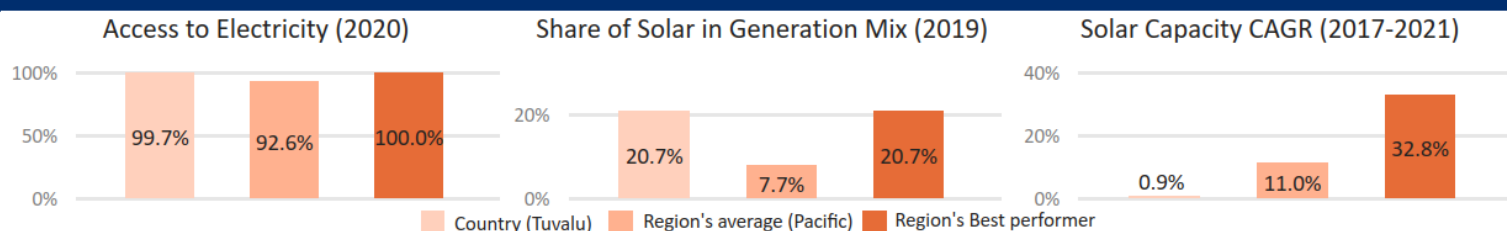
Feed-in-Tariffs for renewable energy supply to the grid?
No

Net metering/Gross metering policies and regulations?
No

Renewable Energy Certificates?
No

Renewable Purchase Obligation?
No

Country's regional performance and characteristics



Areas of Strength

Market Maturity
Technological Feasibility

Areas of Improvement

Energy Imperatives
Financing

Key Insights

Drivers

Insights



Macro-economy

- Tuvalu is a middle-income¹ country with a GDP per capita (PPP) of USD 5,410 in 2021.²
- Due to COVID-19 Pandemic, the GDP (Real) had declined by 1% in 2020. However, in 2021 the GDPt has bounced back by growing at 2.5%.³
- The inflation rate (CPI) of Tuvalu has increased to 2.9% in 2021 from 1.6% levels in 2020.⁴
- The general government gross debt to GDP has reached 6% in 2021 from 7.4% levels in 2020.⁵



Policy enablers

- Enetise Tutumau 2012-2020, a master plan for RE and EE in Tuvau, has visioned achieving 100 % electricity through renewable energy by 2020.⁶
- Tuvalu Renewable Energy Project has updated its roadmap for Funafati to achieve 100% electricity generation through renewable energy by 2025.⁷



Technological Feasibility

- Tuvalu receives high levels of solar irradiation (GHI) of 5.3 kWh/m²/day and specific yield 4.3 kWh/kWp/day indicating a high technical feasibility for solar in the country.⁸
- Tuvalu with the support of The World Bank had added additional capacity of 750 kWp with 1000 kWh battery energy storage system (BESS), to an existing solar-diesel hybrid system, which was operationalised in 2021.⁷
- As per entura Tuvalu Funafati roadmap 2019, various government and community buildings were identified for solar rooftop installations to enable economies of scale.⁷



Market Maturity

- 99.7% of the population in Tuvalu had access to electricity as of 2020.⁹
- Tuvalu Electric Corporation (TEC) is the state-owned power utility which plans, operates, and maintains the generation, distribution, and sales of electric power.¹⁰



Infrastructure

- Tuvalu's Funafuti power transmission operates using 11 kV cables from the Fongafale power plant and via substations (with 11 kV/415V-240 V) at 14 locations on the island.¹⁰
- Tuvalu has been focussing on building institutional, human, and technical capacity for the implementation of solar power systems.¹⁰
- As per Tuvalu Infrastructure Strategy and Investment Plan-2017, an investment of 12 Mn AUD was estimated for battery replacement of the solar PV systems.¹¹



Financing

- The World Bank through International Development Association (IDA) has approved a USD 7 Mn grant to enhance Tuvalu Energy Security.¹²
- The ESMAP has given a grant of USD 2.1 Mn grant under Small Island Developing States (SIDS) category to support Tuvalu to achieve energy security through clean energy.¹²
- The Asian Development Bank (ADB) has approved a USD 6 Mn grant to the Government of Tuvalu to expand its access to modern energy services, improve quality, reliability, and climate resilience.¹³



Energy Imperatives

- The total installed capacity of solar PV witnessed a CAGR of 0.94% reaching 2.31 MW in 2021 from 2.23 MW levels in 2017.¹⁴
- 70% of the population in Tuvalu have access to clean energy fuel.¹⁵
- In 2021, the total installed capacity in the country had reached 2.8 MW¹⁷ with a majority share coming from oil.¹⁸