Tonga

Asia & Pacific

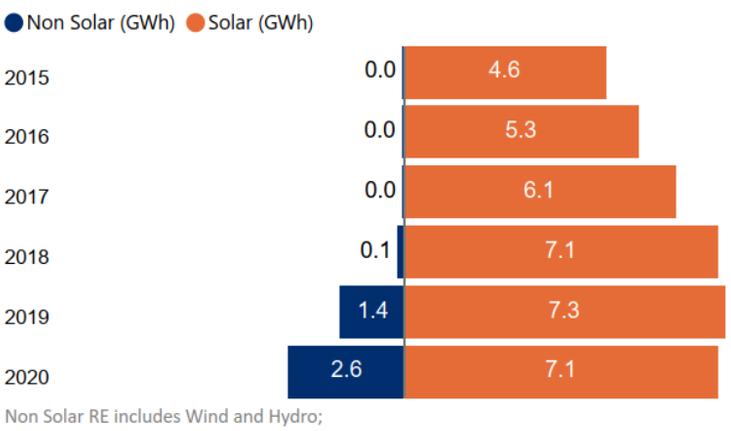
Ease of doing Solar classification

Influencer

Electricity Consumption in kWh/capita (2020)	Average PVout in kWh/ kWp/day (2020)	Cumulative Solar Capacity in MW (2021)
567.7	**4.0**	**6.3**

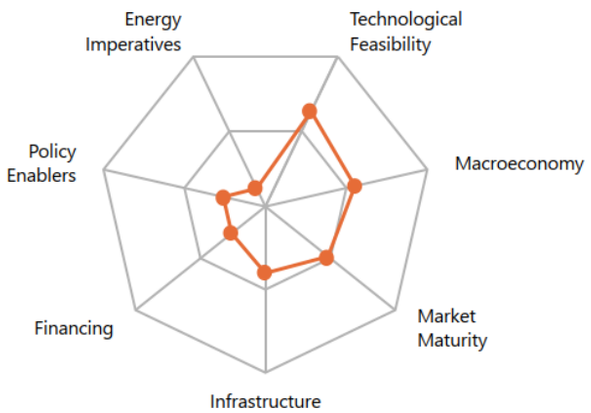
Getting Electricity Score (2020)	NDC Target by 2030 in % (base year 2006)	Human Development Index (2021)
73.2	**13.0**	**0.7**

Renewable Energy Generation by Source

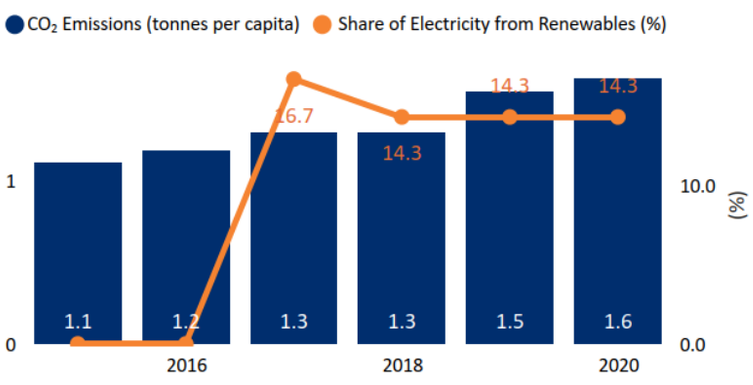


Non Solar RE includes Wind and Hydro;

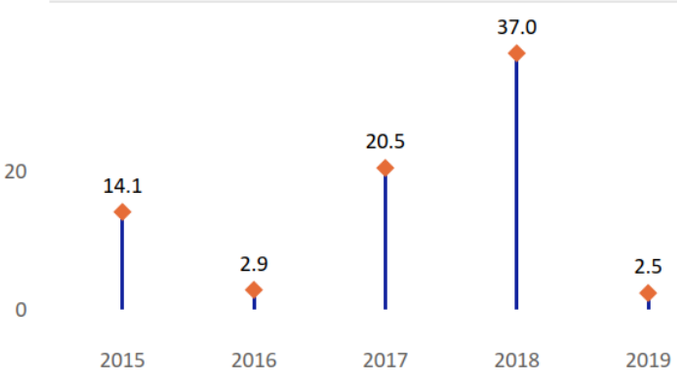
Performance against 7 Drivers



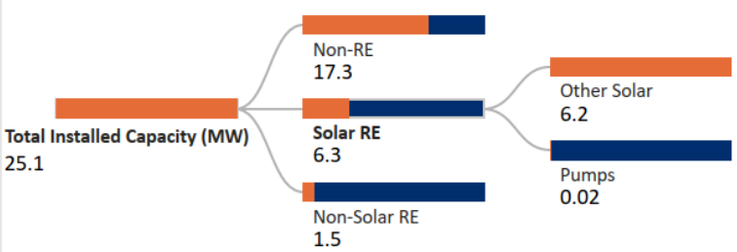
CO_2 Emissions vs Electricity share from Renewables



International Finance received for Clean Energy (Million US Dollars)



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.;

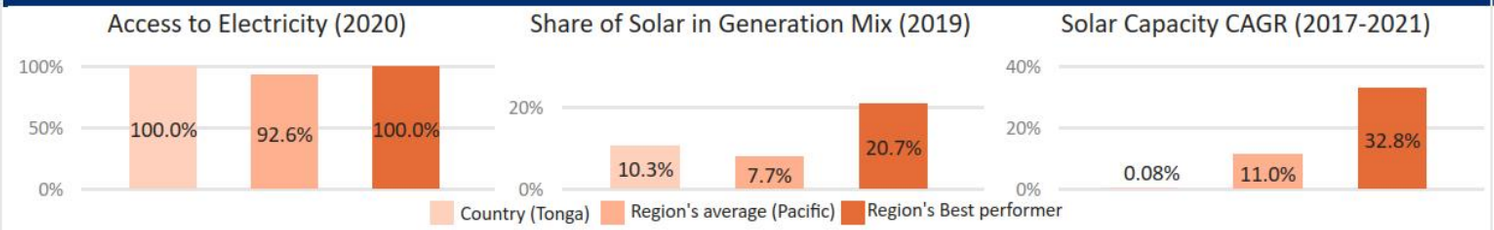
Data not available for other Solar RE segments;

Support for Renewables (2020)

Feed-in-Tariffs for renewable energy supply to the grid?	Net metering/Gross metering policies and regulations?
No	**No**

Renewable Energy Certificates?	Renewable Purchase Obligation?
No	**No**

Country's regional performance and characteristics



Areas of Strength → Macroeconomy; Technological Feasibility

Areas of Improvement → Energy Imperatives; Policy Enablers

Key Insights

Drivers	Insights
Macro-economy	• Tonga is a middle-income[1] country with a GDP per capita (PPP) of USD 6,749 in 2020.[2] • Due to COVID-19 Pandemic, the GDP (Real) declined to 0.5% in 2020 and it further declined by 2.7% in 2021.[3] • The inflation rate (CPI) of Tonga has increased to 1.4 % in 2021 from 0.4% levels in 2020.[4] • The general government gross debt to GDP has reached 47.5% in 2021 from 43.6 % levels in 2020.[5]
Policy enablers	• Tonga has committed to achieve a share of 70% from renewables in the generation mix by 2030.[6] • Tonga has also been working to achieve its energy efficiency target by 2030.[7] • Tonga Climate Change Policy is focused towards building a resilient Tonga by 2035 envisioning an integrated approach to adaptation, disaster risk reduction and mitigation.[7]
Technological Feasibility	• Tonga receives high levels of solar irradiation (GHI) of 4.9 kWh/m^2/day and specific yield 4.0 kWh/kWp/day indicating a high technical feasibility for solar in the country.[8] • Tonga Renewable Energy Project (TREP) entails electricity generation from renewable sources and grid technologies.[9] • In March 2021, Energy Department of the Ministry of MEIDECC conducted a procurement for solar PV/BESS based micro-grid in 'O'ua, Tungua, Kotu and Mo'unga'one and for the island of Niuafo'ou.[10]
Market Maturity	• 100% of the population in Tonga is having access to electricity since 2020.[11] • The Electricity Commission regulates the power sector in the country. The state-owned Tonga Power Ltd (TPL) generates, transmits, and distributes electricity to the four islands in Tonga.[12] • Tonga has developed the Renewable Energy Act, 2016 that promotes the development of renewable energy industry in the country.[13]
Infrastructure	• Nuku'alofa Network Upgrade Project (NNUP) has helped in reducing network losses and provide safe and reliable electricity supply to approximately 8,472 households and businesses.[14] • Tonga is changing the existing electricity meters with the new smart meters to improve electricity services to the consumers.[15]
Financing	• ADB has financed Tonga's renewable energy project with an estimated cost of USD 750 Mn.[16] • The Green Climate Fund (GCF) has given a grant of USD 29.9 Mn to emphasis on a climate-resilient battery energy storage system and renewable energy systems.[17] • Australian Government and Government of Tongo has funded Tonga Renewable Energy Project with amounts of USD 2.50 Mn and USD 5.60 Mn respectively.[18]
Energy Imperatives	• In 2020, the per capita electricity consumption stood at 0.567 MWh in Tonga, which is lower in comparison to the global average of 3.31 MWh.[19] • The total installed capacity of solar PV witnessed a CAGR of 0.08% between 2017-2021 reaching 6.3 MW in 2021 from 6.2 MW levels in 2017.[20] • The peak demand for electricity in the country stood at 0.06 TWh remaining same in 2021 and 2020.[21] •In 2021, the total installed capacity in the country reached 25 MW[22] with almost 100% share coming from fossil fuel based electricty.[21]