### Tuvalu

**Ease of doing Solar classification**

<table>
<thead>
<tr>
<th>Influence</th>
<th>Appropriator</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia &amp; Pacific</td>
<td>Influencer</td>
<td>8.38°S</td>
<td>178.9°E</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available</td>
<td>4.3</td>
<td>2.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Getting Electricity Score (2020)</th>
<th>NDC Target by 2025</th>
<th>Human Development Index (2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available</td>
<td>Net zero</td>
<td>0.6</td>
</tr>
</tbody>
</table>

#### Renewable Energy Generation by Source

<table>
<thead>
<tr>
<th>Year</th>
<th>Solar (GWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>0.8</td>
</tr>
<tr>
<td>2016</td>
<td>2.0</td>
</tr>
<tr>
<td>2017</td>
<td>2.0</td>
</tr>
<tr>
<td>2018</td>
<td>2.0</td>
</tr>
<tr>
<td>2019</td>
<td>2.0</td>
</tr>
<tr>
<td>2020</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Non Solar RE includes Wind and Hydro;

#### CO2 Emissions vs Electricity share from Renewables

<table>
<thead>
<tr>
<th>Year</th>
<th>CO2 Emissions (tonnes per capita)</th>
<th>Share of Electricity from Renewables (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2018</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>2020</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

#### Fiscal Incentives & Public Financing for Renewables (2020)

- **Investment or production tax credits?** No
- **Public investment, loans, grants, capital subsidies or rebates?** No

#### 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

Access to Electricity (2020)
- Tuvalu: 99.7%
- Region's average: 92.6%
- Region's Best performer: 100.0%

Share of Solar in Generation Mix (2019)
- Tuvalu: 20.7%
- Region's average: 7.7%
- Region's Best performer: 20.7%

Solar Capacity CAGR (2017-2021)
- Tuvalu: 0.9%
- Region's average: 11.0%
- Region's Best performer: 32.8%

Areas of Strength
- Market Maturity
- Technological Feasibility

Areas of Improvement
- Energy Imperatives
- Financing

Key Insights

Drivers
- Tuvalu is a middle-income 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 GDP 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

Insights
- Enetise Tutumau 2012-2020, a master plan for RE and EE in Tuvalu, 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
- 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
- Tuvalu Electric Corporation (TEC) is the state-owned power utility which plans, operates, and maintains the generation, distribution, and sales of electric power.¹⁰

- 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
- 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

- 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