



Sao Tome and Principe

Africa

Ease of doing Solar classification



Potential

Electricity Consumption
in kWh/capita (2020)

456.3

Average PVout in kWh/kWp
(2020)

3.5

Cumulative Solar Capacity in MW
(2021)

0.3

Getting Electricity Score (2020)

62.1

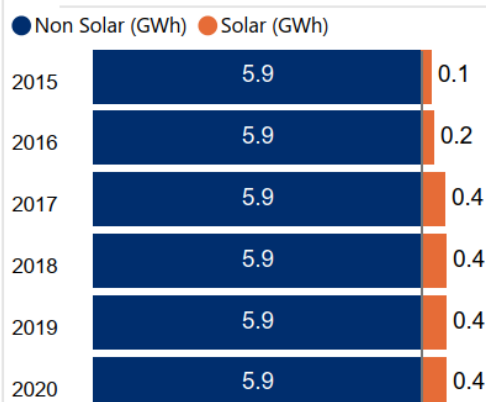
NDC Target by 2030 in %

27.0

Human Development Index (2021)

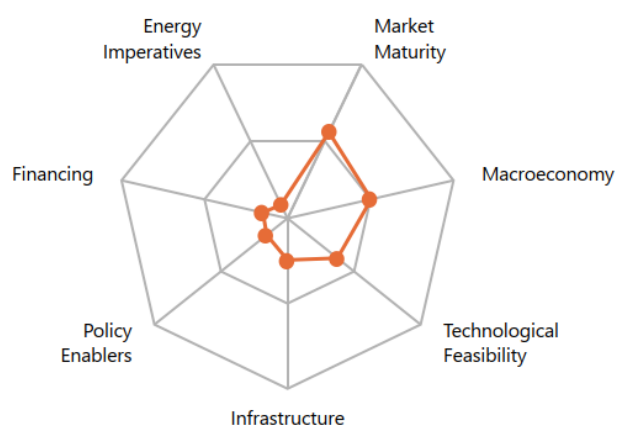
0.6

Renewable Energy Generation by Source

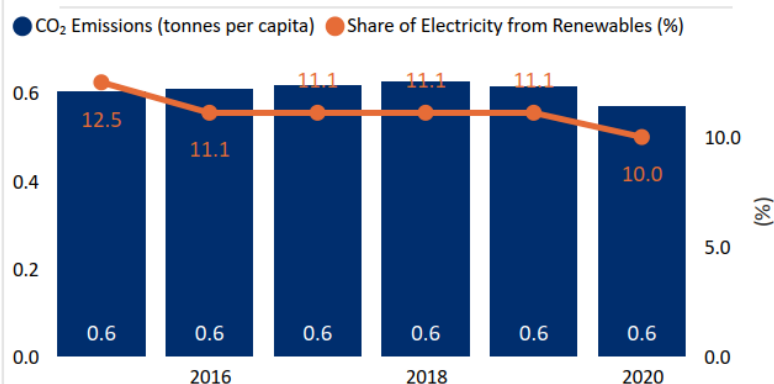


Non Solar RE includes Wind and Hydro;

Performance against 7 Drivers



CO₂ Emissions vs Electricity share from Renewables



Fiscal Incentives & Public Financing for Renewables (2020)

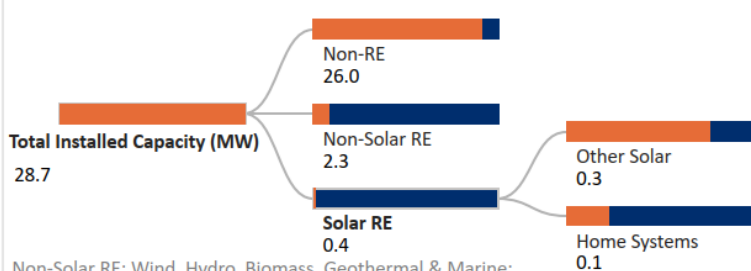
Investment or production tax credits?

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

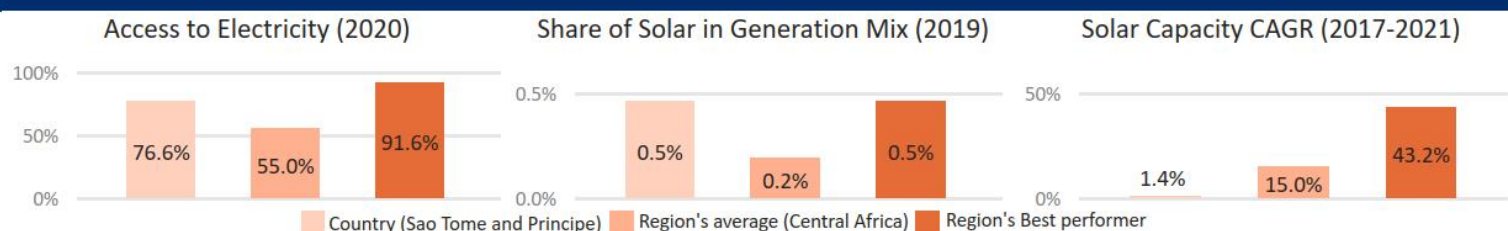
Renewable Energy Certificates?

No

Renewable Purchase Obligation?

No

Country's regional performance and characteristics



Areas of Strength

Macroeconomy
Market Maturity

Areas of Improvement

Energy Imperatives
Financing

Key Insights

Drivers

Insights



Macroeconomy

- The inflation rate in the country increased to 9.5% in 2021 from 9.4% in 2020.²
- GDP (Real) grew at an annual rate of 1.8% in 2021 and it is estimated to grow by 1.6% in 2022.¹
- The current account deficit declined marginally to 10.1% of GDP in 2021 from 11.6% levels in 2020.²
- Total public debt in the country declined to 87.9% of GDP in 2021 from 99.9% levels in 2019.²



Policy enablers

- Sao Tome and Principe aims to increase RE generation from 26 MW to 49 MW and to reduce its CO₂ emissions to 27% by 2030.²
- The Directorate General of Natural Resources and Energy (DGRNE) is responsible for the design, promotion, and evaluation of strategic policies on water, energy, and geological resources.³
- The Energy Transition and Institutional Support Programme (ETISP) is designed to promote green growth, sustainable development of the power system, and strengthening public financial management in Sao Tome and Principe.⁴



Technological Feasibility

- Sao Tome and Principe receive high levels of solar irradiation of 4.9 kWh/m²/day and a specific yield of 3.5 kWh/kWp/day indicating strong technical feasibility for solar in the country.⁵
- As of 2020, the Government of Sao Tome and Principe is planning for the hybridization of one of the main thermal power plants (Santo Amaro) with solar photovoltaic technology through the Energy Transition and Institutional Support Programme (ETISP).⁴



Market Maturity

- 76.6% population in Sao Tome and Principe had access to electricity as of 2020.⁶
- Autoridade Geral de Regulação (AGER) is responsible for regulating and supervising the electricity sector in the country.⁷
- Empresa de Água e Eletricidade (EMAE) is a public entity responsible for the production, transport, and distribution of electric energy in the country.⁸
- Sao Tome and Principe is a member of the Central Africa Power Pool, which aims to strengthen the regional border on access to electrical service.⁹



Infrastructure

- The MV network (<60 kV) comprises of about 203 linear km and is composed of overhead lines supported by more than 1,200 underground cable posts.¹⁰
- The LV network system comprises of more than 300 km, supported by 3,500 poles in Sao Tome.¹⁰
- The transformation system comprises 2 substations with a power of 30.7 MVA, six sectioning points, and 183 transformer substations with an installed transformation capacity of 47.5 MVA.¹⁰



Financing

- Since 2020, the Global Environment Facility (GEF) in partnership with the country's Ministry of Public Works, Infrastructure, Natural Resources and Environment (MOPIRINA) has been working to promote RE and EE investments in the electricity sector.¹¹
- In 2020, African Development Fund approved USD 10.44 Mn for initiating the energy transition towards RE and for providing institutional support while strengthening financial governance and the business climate.⁴
- The Sustainable Energy Fund for Africa (SEFA) managed by the AfDB approved a USD 1 Mn grant to support the Republic of São Tomé & Príncipe for unlocking private investments in the development of mini hydropower projects.¹²



Energy Imperatives

- In 2020, Sao Tome and Principe's per capita electricity consumption stood at 0.46 MWh, which is significantly lower in comparison to the global average of 3.31 MWh.¹⁵
- The total installed capacity in the country stood at 28.7 MW in 2019.¹³
- The total installed capacity of solar PV witnessed a CAGR of 1.4% between 2017-2021 reaching 0.334 MW in 2021 from 0.316 MW levels in 2017.¹⁴
- The price of electricity in the country stood at 17 US Cents/kWh as of 2019.¹⁶