Comoros

Africa

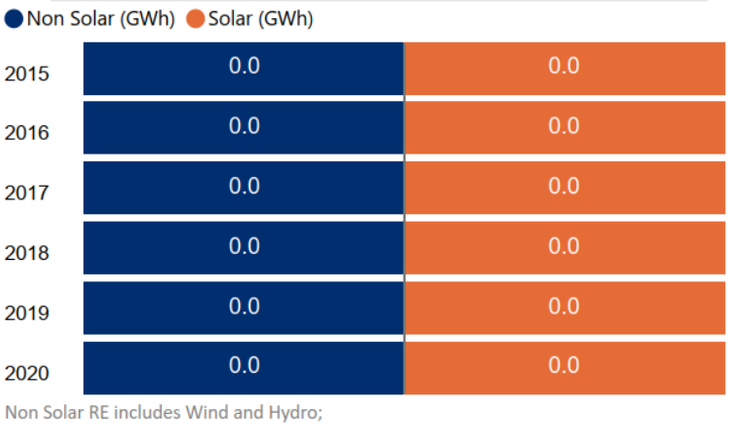
Ease of doing Solar classification

Progressive

Electricity Consumption in kWh/capita (2020)	Average PVout in kWh/kWp/day (2020)	Cumulative Solar Capacity in MW (2021)
149.5	4.3	0.0

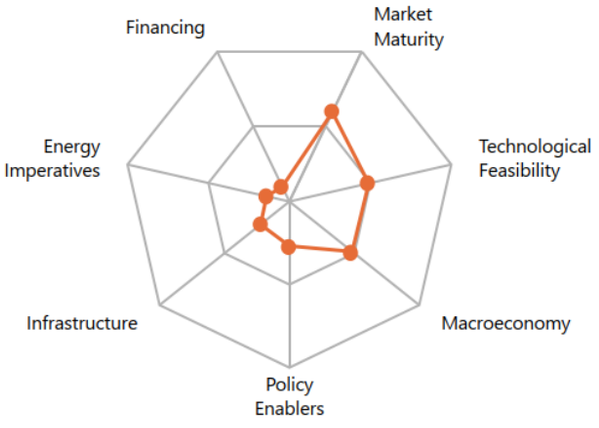
Getting Electricity Score (2020)	NDC Target by 2030 in %	Human Development Index (2021)
60.2	23.0	0.6

Renewable Energy Generation by Source

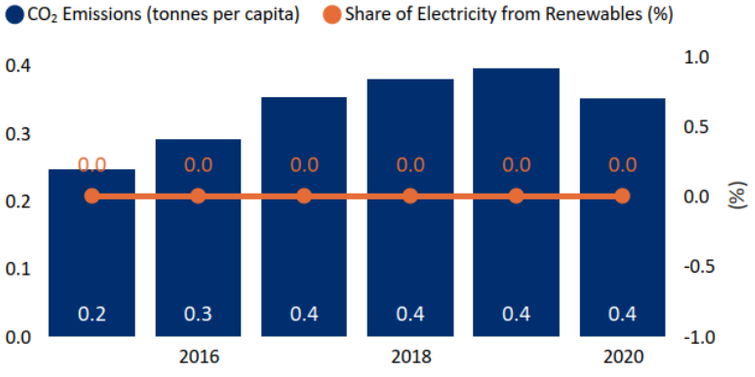


Non Solar RE includes Wind and Hydro;

Performance against 7 Drivers



CO_2 Emissions vs Electricity share from Renewables



Fiscal Incentives & Public Financing for Renewables (2020)

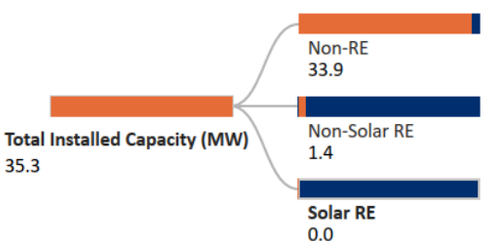
Investment or production tax credits?

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;

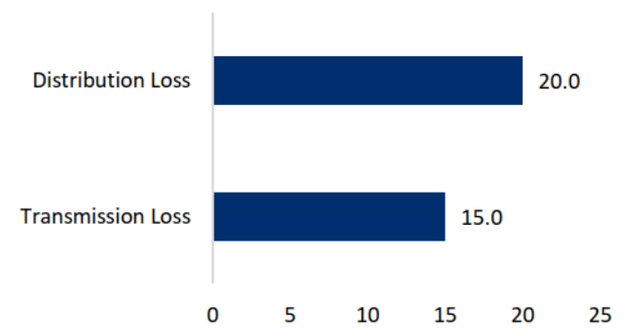
Support for Renewables (2020)

Feed-in-Tariffs for renewable energy supply to the grid?	Net metering/Gross metering policies and regulations?
Yes	**Yes**

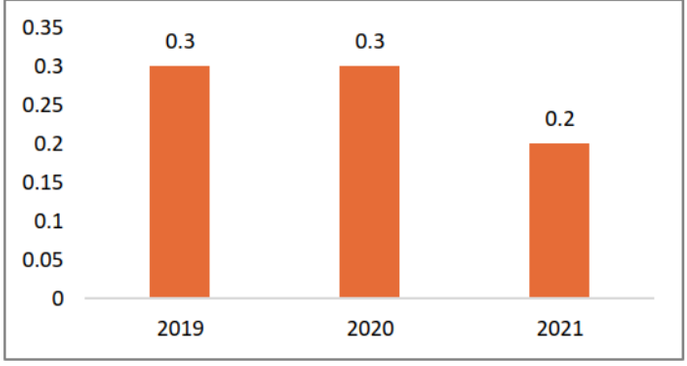
Renewable Energy Certificates?	Renewable Purchase Obligation?
No	**No**

Electricity Consumption CAGR in % (2022 - 2026)	Average term of Solar PPAs in years (2021)	Cheapest Source of Power (2021)
95.0	25.0	Solar

Average T&D Loss Levels in % (2021)



Average Solar Tariffs in USD/ kWh



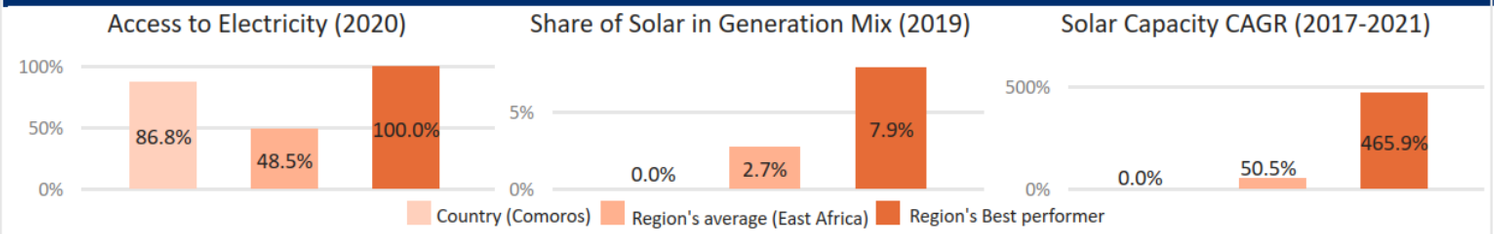
Financial Support Mechanisms (2021)	
Duty waivers to solar developers for importing/procuring material from foreign land	Yes
Tax waivers for manufacturers of raw materials (modules, off grid appliances, etc.)	No
Credit facilitation for solar energy from financial institutions (FIs)	Yes
Viability Gap Funding (VGF) i.e. Grant to support RE projects that are economically justified but fall short of financial viability	Yes
Accelerated Depreciation benefit for Industrial/commercial users of Solar Power	No

Policies/Schemes for Solar Segments (2021)

Rooftop Solar	Solar Mini Grids	Standalone solar systems	Utility scale solar	Solar Parks	Floating Solar	Solar heating and cooling system	Battery waste management	Green Hydrogen
Yes	Yes	Yes	Yes	No	No	No	No	No

Emerging Technologies/Innovative Models (2021)	
Hybrid technologies - combination of two or more technologies to achieve efficient systems (Example: wind + solar PV hybrid systems, solar + storage systems)	Yes
Emerging technologies - the next generation technologies (Example: Artificial Intelligence, Machine learning, Internet of Things, etc.)	Yes
E-mobility/Electric vehicles	Yes

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	•Comoros is a lower middle-income country[1] with GDP per capita (PPP) of USD 3,547 as of 2021.[2] •GDP (Real) grew at an annual rate of 2.2% in 2021 and it is estimated to grow by 3.5% in 2022.[3] •Inflation rate in the country increased to 1.4% in 2021 from 0.9% levels in 2020.[4] •The current account deficit widened to 3.6% of GDP in 2021 from 2% levels in 2020.[4]
Policy enablers	•The Energy, Mines, and Water Directorate (Direction Générale de l'Energie, des Mines et de l'Eau, DGEME) is the agency responsible for managing the energy sector in the country.[5] •National Energy Sector Strategy and Poverty Reduction and Growth Strategy Paper (PRGSP) aims for an ambitious target for access to energy and electricity.[6] •The 'document de politique de l'énergie électrique et des produits pétroliers de l'Union des Comores' adopted in 2012 prioritizes RE for electricity generation.[7] •Comoros aims to reduce its GHG emissions up to 23% and increase its net CO_2 absorption sink of 47% by 2030.[4]
Technological Feasibility	•Comoros receives high levels of solar irradiation of 4.9 kWh/m²/day and specific yield of 4.3 kWh/kWp/day indicating a strong technical feasibility for solar in the country.[8] •The country typically receives 12 hours of sunlight per day.[9] •Two 3 MW PV plus battery storage IPP projects are currently under development by private developers, one in Grande Comore ('Innovent') and the other in Anjouan ('VIGOR').[5]
Market Maturity	•86.8% population in Comoros is having access to electricity since 2020.[10] •Société Nationale de l'Electricité des Comores (SONELEC) is responsible for Production, Transmission, Distribution and Marketing of Electrical Energy in the Union of the Comoros.[11] •The Gestion de l'Eau et de l'Electricité aux Comores (MAMWE) and Electricité d'Anjouan (EDA) are the energy regulator across islands of Grand Comore and Moheli and Anjouan islands in Comoros.[6]
Infrastructure	•In Comoros, the capacity of the Transmission Infrastructure is 20 MVA at an voltage level of 22 kV.[9] •The country's average Transmission and Distribution loss levels are 15% and 20% respectively.[9] •The expected investment in the Transmission & Distribution Infrastructure over next 5 years is USD 37 Mn.[9]
Financing	•In 2014, Sustainable Energy Fund for Africa (SEFA) approved a USD 480,000 grant to Comoros to facilitate private sector participation in RE sector.[12] •The EU is supporting the country through a grant of EUR 2 Mn with an objective to install 6 grid connected micro power stations with a combined capacity of 300 kW.[13] •The World Bank has invested USD 28.6 Mn in Power Storage, Pilot PV, and System upgrades of which USD 2.6 Mn will come from SIDS DOCK trust fund.[5]
Energy Imperatives	•The total installed capacity in the country stood at 35.3 MW in 2019.[13] •The total installed capacity of solar mini grids is 0.225 MW as of 2021.[14] •In 2020, the per capita electricity consumption stood at 0.15 MWh which is significantly lower in comparison to the global average of 3.31 MWh.[15] •The price of electricity in the country was 26.8 US Cents/kWh as of 2019.[16]