



Cuba

Latin America & Caribbean

Ease of doing Solar classification



Progressive

Electricity Consumption in kWh/capita (2020)

1634.2

Average PVout in kWh/kWp/day (2020)

4.5

Cumulative Solar Capacity in MW (2021)

245.9

Getting Electricity Score (2020)

Not available

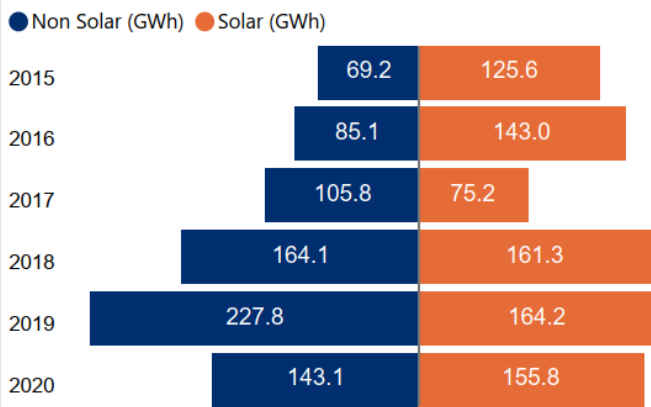
NDC Target by 2030 in % (base year 2005)

Not available

Human Development Index (2021)

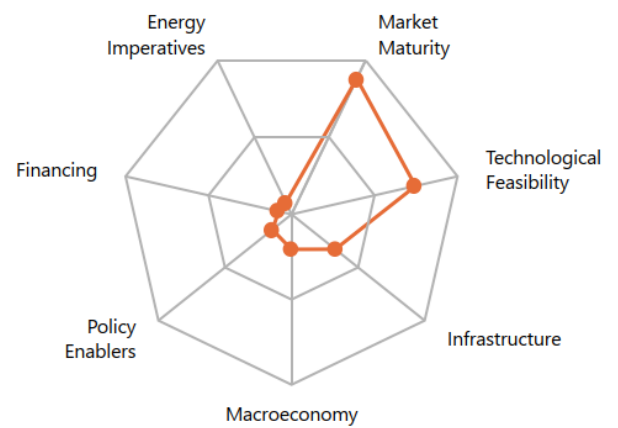
0.8

Renewable Energy Generation by Source

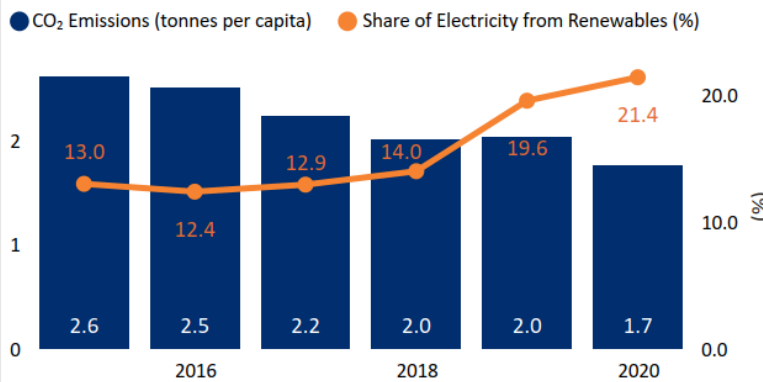


Non Solar RE includes Wind and Hydro;

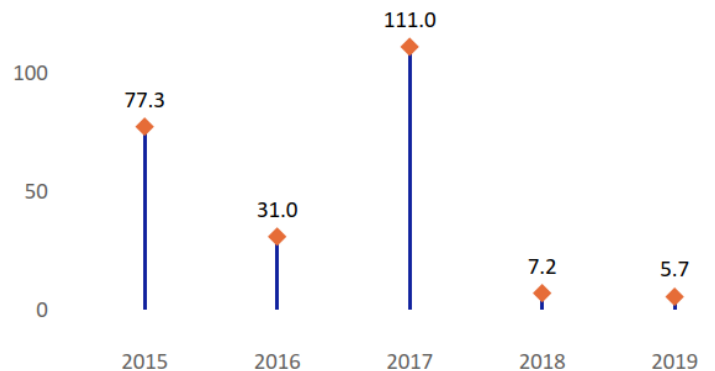
Performance against 7 Drivers



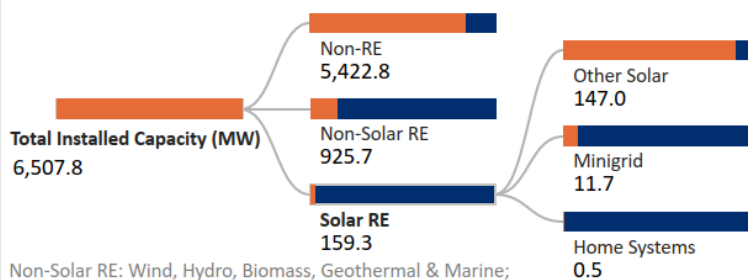
CO₂ Emissions vs Electricity share from Renewables



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?

No

Net metering/Gross metering policies and regulations?

No

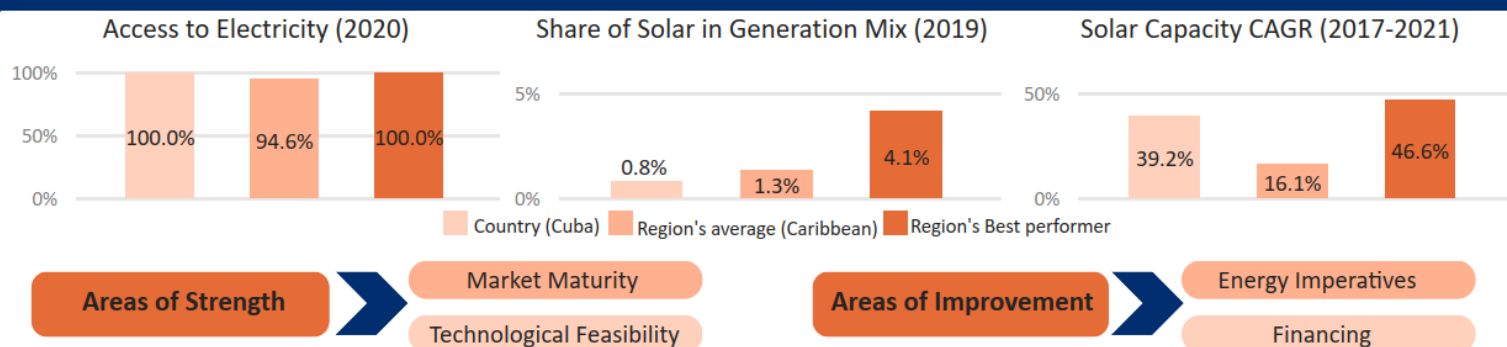
Renewable Energy Certificates?

No

Renewable Purchase Obligation?

No

Country's regional performance and characteristics



Key Insights

Drivers

Insights



Macro-economy

- Cuba is an upper middle income¹ country with a GDP per capita (PPP) of USD 9,478 in 2020.²
- Due to COVID-19 Pandemic, the GDP (Real) declined by 10.9% in 2020. However, in 2021 it has bounced back growing at a rate of 0.5%.³
- The inflation rate (CPI) of Cuba was expected to increase by 500% in 2021 from 18.3% levels in 2020.³
- The general government gross debt to GDP has marginally increased to 24.5% in 2021 from 22.1% levels in 2020.³



Policy enablers

- Cuba has a plan, Plan Nacional de Desarrollo Económico y Social (the National Social and Economic Development Plan), which targets to increase share of clean energy output to 37% by 2030.⁴
- The Government of Cuba has published new rules that introduce incentives, import tariff exemptions, and tax benefits for distributed generation, in order to facilitate the installation and purchase of renewable electricity.⁵



Technological Feasibility

- Cuba receives high levels of solar irradiation (GHI) of 5.4 kWh/m²/day and specific yield 4.5 kWh/kWp/day indicating a high technical feasibility for solar in the country.⁶
- In July 2022, India's Public Sector Utility NTPC has sought global bids on behalf of Unión Eléctrica de Cuba (UNE) for 1,150 MW of grid-connected solar PV and 150 MW/150 MWh battery energy storage system (BESS) projects in Cuba.⁷



Market Maturity

- 100% of the population in Cuba had access to electricity as of 2020.⁸
- The Ministry of Energy and Mines (MINEM) regulates the power sector in the country.
- In Cuba the Power generation is handled by independent power producers while the transmission and distribution of electricity is handled by state run entity named Unión Eléctrica (UNE).⁹



Infrastructure

- Cuba's transmission grid operates at 220/110 kV. In total, the country has 2,833 km of 220 kV lines and 4,188 km of 110 kV lines.¹⁰
- Cuba has state run company Cubaelectrónica (the import company for CCE - Empresa de Componentes Electrónicos) with a capacity of manufacturing 16,000 solar panels per year.¹¹



Financing

- In 2019, the Opec Fund for International Development (OIFD) extended a loan of USD 45 Mn to develop Cuba's Renewable energy.¹²
- Cuba has planned to invest more than USD 3.5 Bn in the RE sector to bring RE share in the energy mix to approximately 25% by 2030.¹²
- The Green Climate Fund (GCF) has allocated USD 62.1 Mn to Cuba to mitigate climate challenges.¹³



Energy Imperatives

- In 2020, the per capita electricity consumption stood at 1.63 MWh which is significantly lower in comparison to the global average of 3.31 MWh.¹⁴
- The total installed capacity of solar PV witnessed a CAGR of 39.22% reaching 245.95 MW in 2021 from 65.5 MW levels in 2017.¹⁵
- The peak demand for electricity in the country stood at 18.45 TWh remaining similar in 2021 and 2020.¹⁶
- In 2021, the total installed capacity in the country stood at 6.58 GW¹⁷ with maximum share coming from oil (72%), solid fuels (14%), gas (9%), solar (4%) and hydro (1%).¹⁶