



Chad

Africa

Ease of doing Solar classification



Progressive

Electricity Consumption in kWh/capita (2020)

17.0

Average PVout in kWh/kWp/day (2020)

4.8

Cumulative Solar Capacity in MW (2021)

0.7

Getting Electricity Score (2020)

32.2

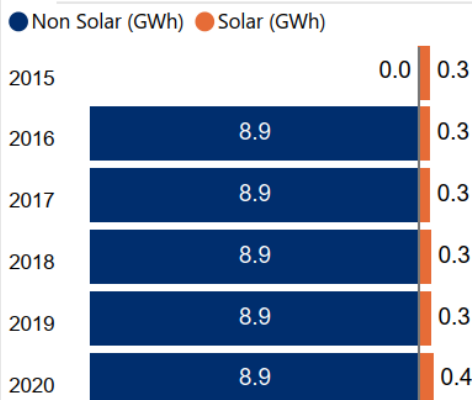
NDC Target by 2030 in % (base year 2018)

19.3

Human Development Index (2021)

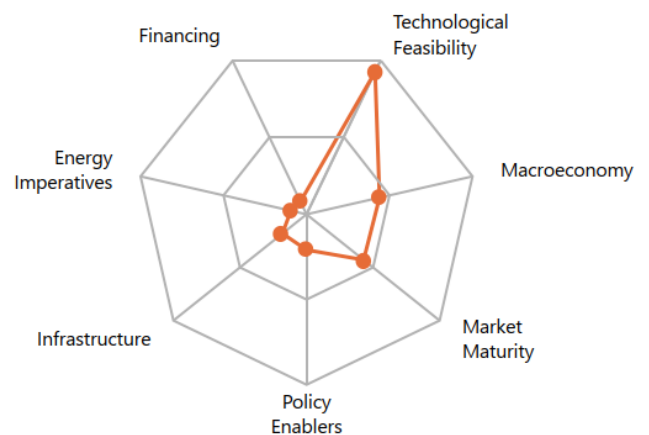
0.4

Renewable Energy Generation by Source

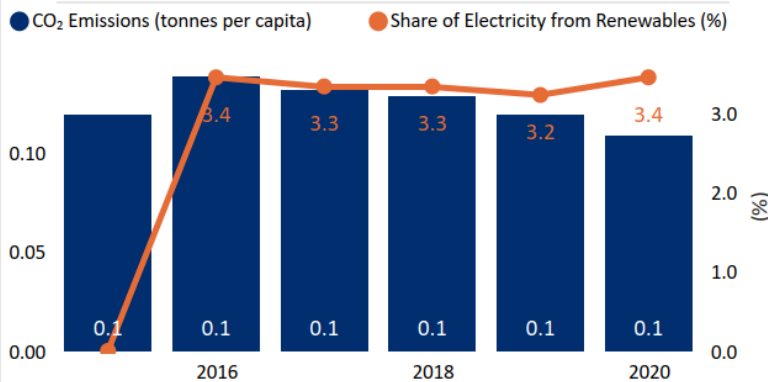


Non Solar RE includes Wind and Hydro;

Performance against 7 Drivers



CO₂ Emissions vs Electricity share from Renewables

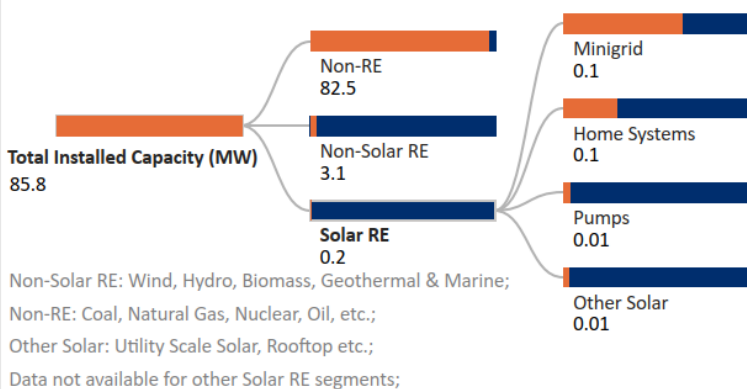


Fiscal Incentives & Public Financing for Renewables (2020)

Investment or production tax credits?
No

Public investment, loans, grants, capital subsidies or rebates?
No

Installed Capacity by Source (2019)



Support for Renewables (2020)

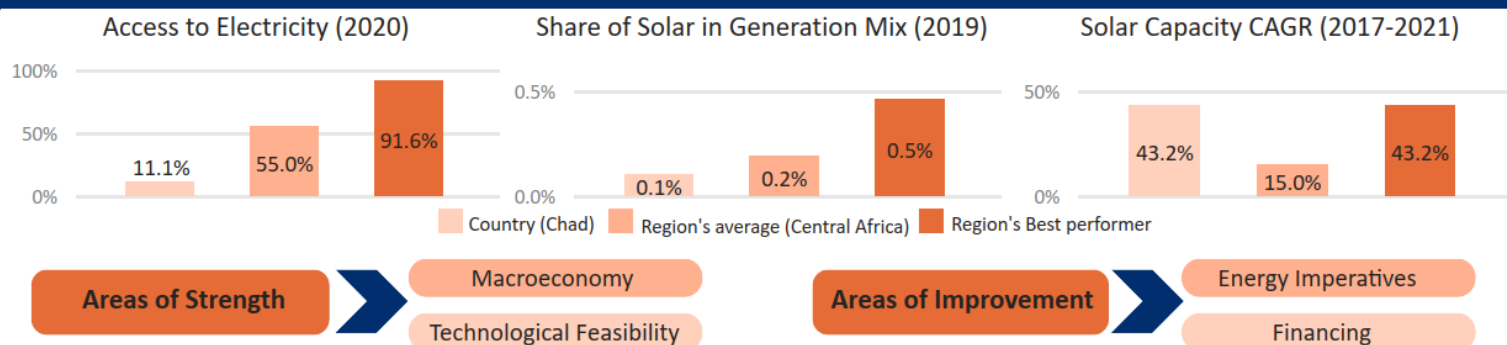
Feed-in-Tariffs for renewable energy supply to the grid?
No

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



Macroeconomy

- Chad is a low-income country¹ having GDP per capita (PPP) of USD 1,566 in 2021.²
- GDP (Real) declined at an annual rate of 1.1% in 2021, however, it is estimated to grow by 3.3% in 2022.³
- The current account deficit narrowed down to 3.9% in 2021 from 8.1% levels in 2020.⁴
- Total public debt in the country reduced to 48.2% of GDP in 2021 from 51.5% levels in 2020.⁴



Policy enablers

- Agency for Renewable Energy Development (ADER) is responsible to promote renewable energy in the country.⁵
- In 2020, exemption from duties and taxes on all imports of solar components was granted in the country.⁴



Technological Feasibility

- Chad receives very high levels of solar irradiation of 6.3 kWh/m²/day and specific yield of 4.8 kWh/kWp/day indicating a very strong technical feasibility for solar in the country.⁶
- In Chad, Djermaya solar power plant became the first renewable power generation project in the country⁷ with 4 MWh battery energy storage system (BESS).⁸
- Chad government along with energy company 'Savannah Energy' is planning to develop 400 MW of solar-plus-battery projects in the country.⁹



Market Maturity

- Only 11.1% population in Chad is having access to electricity as of 2020.¹⁰
- The Ministry of Energy and Petroleum is responsible for the design, coordination, implementation and monitoring of government policies in the energy sector.¹¹
- Electric Energy Authority is the energy regulator in the country.¹¹
- The Société Nationale d'Electricité (SNE) is the sole generator, transmitter, and distributor of electric energy.¹¹



Infrastructure

- Cameroon-Chad Power Interconnection Project consists of 1,024 kms of HV transmission lines (786 kms in Cameroon and 238 kms in Chad).¹²
- Only 10% of the population in Chad has reliable electricity; the percentage falls to about 1% in rural areas.¹³



Financing

- In 2022, the World Bank approved a USD 295 Mn grant from the International Development Association (IDA) to help Chad expand its access to energy.¹⁴
- In 2022, the AfDB approved USD 379.6 Mn Desert to Power financing facility for Chad and committed to provide technical assistance over the next seven years.¹⁵
- The Sustainable Energy Fund for Africa (SEFA) approved a USD 780,000 grant for the development of a first phase 40 MW of Starsol solar PV plant in Chad.¹⁶



Energy Imperatives

- The total installed capacity in the country stood at 85.8 MW in 2019.¹⁷
- The total installed capacity of solar PV witnessed a CAGR of 43.2% between 2017-2021 reaching 0.73 MW in 2021 from 0.17 MW levels in 2017.¹⁸
- In 2020, the per capita electricity consumption stood at 0.02 MWh which is significantly lower in comparison to the global average of 3.31 MWh.¹⁹
- The price of electricity in the country was 20.5 US Cents/kWh as of 2019.²⁰