

Nigeria

Africa

Ease of doing Solar classification



Influencer

Electricity Consumption in kWh/capita (2020)

136.6

Average PVout in kWh/kWp/day (2020)

4.3

Cumulative Solar Capacity in MW (2021)

32.7

Getting Electricity Score (2020)

47.4

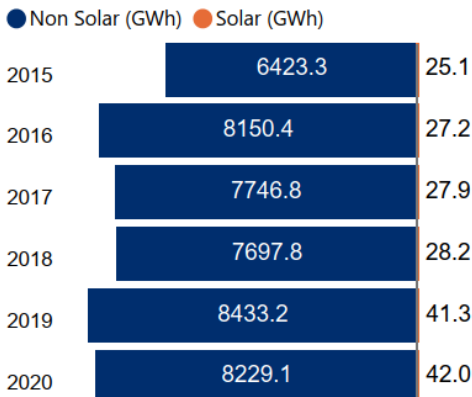
NDC Target by 2030 in % (base year 2018)

47.0

Human Development Index (2021)

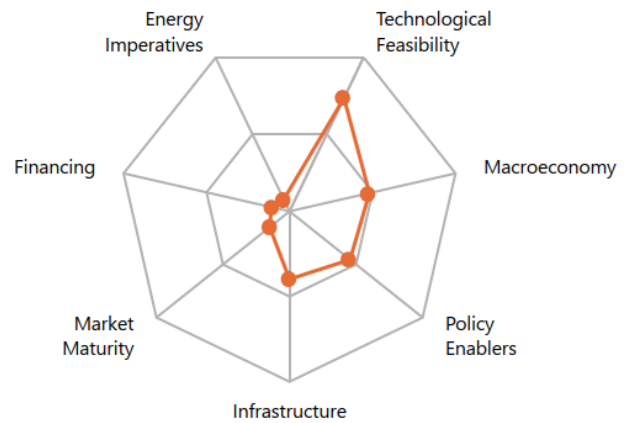
0.5

Renewable Energy Generation by Source

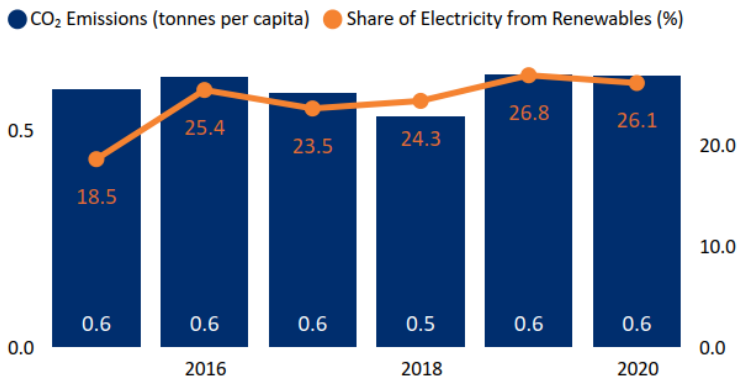


Non Solar RE includes Wind and Hydro;

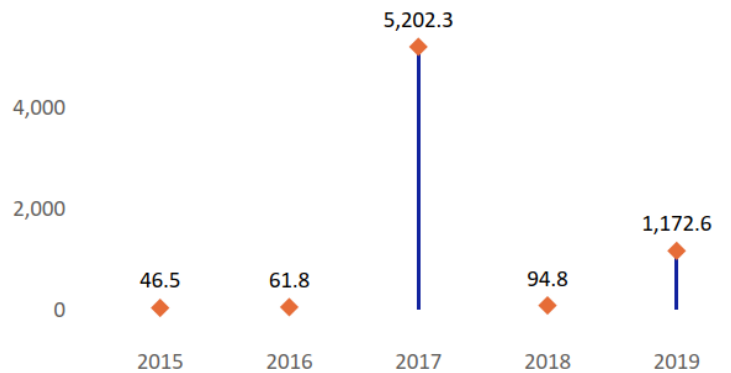
Performance against 7 Drivers



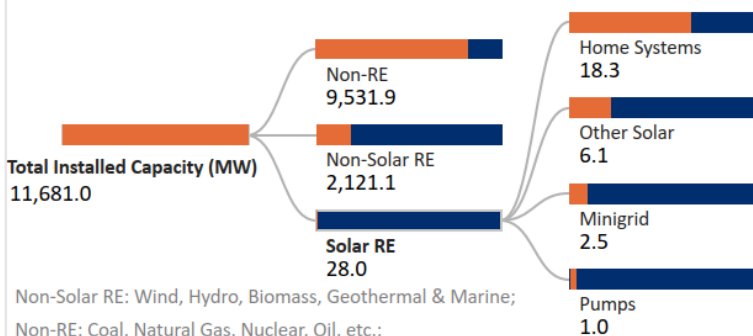
CO₂ Emissions vs Electricity share from Renewables



International Finance received for Clean Energy (Million US Dollars)

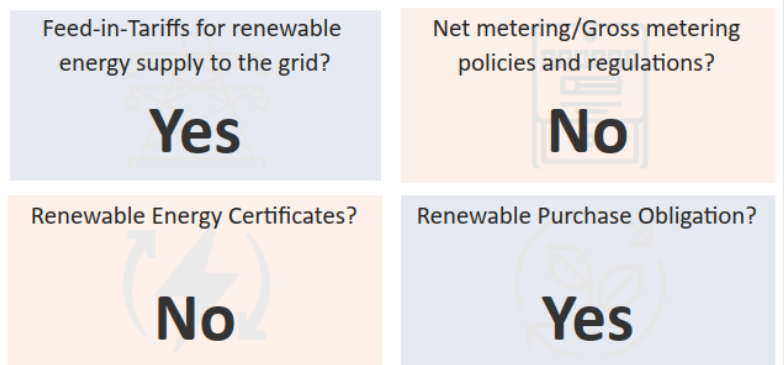


Installed Capacity by Source (2019)

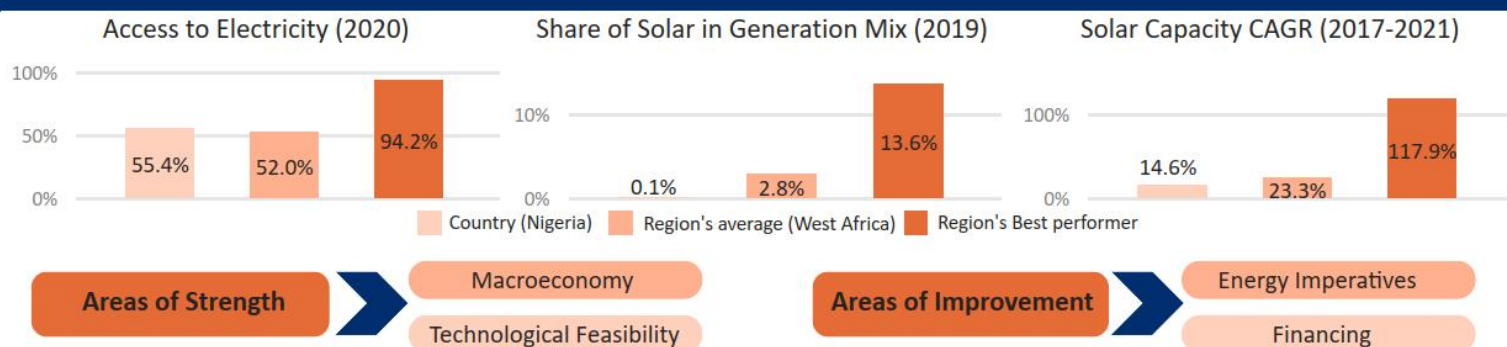


Non-Solar RE: Wind, Hydro, Biomass, Geothermal & Marine;
 Non-RE: Coal, Natural Gas, Nuclear, Oil, etc.;
 Other Solar: Utility Scale Solar, Rooftop etc.;
 Data not available for other Solar RE segments;

Support for Renewables (2020)



Country's regional performance and characteristics



Key Insights

Drivers

Insights



Macroeconomy

- Nigeria is a lower middle-income country with a GDP per capita (PPP) of USD 5,408 in 2021. ^{1, 2}
- GDP (Real) grew at an annual rate of 3.6% in 2021 and it is estimated to grow by 3.4% in 2022. ³
- The fiscal deficit narrowed down to 4.8% of GDP in 2021 from 5.4% levels in 2020 due to a modest uptick in revenues. ⁴
- Total public debt in the country stood at 22.5% of GDP in 2021. ⁴



Policy enablers

- The Federal Ministry of Power is the policy-making arm of the Federal Government with the responsibility for the provision of power in the country. ⁵
- The Government of Nigeria approved feed-in tariff regulations in 2015 that mandate electricity distribution companies to source at least 50% of their electricity requirements from renewables. ⁶
- In 2016, Nigeria adopted the Mini-Grid Policy to regulate mini-grids and speed up the electrification process in the country. ⁷



Technological Feasibility

- Nigeria receives high levels of solar irradiation of 5.2 kWh/m²/day and a specific yield of 4.3 kWh/kWp/day indicating strong technical feasibility for solar in the country. ⁸
- Stand-alone solar photovoltaic (PV) systems offer pay-as-you-go (PAYGo) business models for mini-grids that are not sustainable. ⁹
- The Nigeria Automotive Design and Development Council (NADDC) inaugurated the first Electric Vehicle Charging Station in Nigeria. ¹⁰



Market Maturity

- 55.4% population in Nigeria had access to electricity as of 2020. ¹¹
- Nigerian Electricity Regulatory Commission (NERC) is an independent regulatory body with the authority for regulating electric power industry in Nigeria. ¹²
- Transmission Company of Nigeria (TCN) is responsible to operate, expand/upgrade transmission facilities for efficient and effective wheeling of generated electricity. ¹³
- There are 11 Electricity Distribution Companies in Nigeria namely- Abuja, Benin, Eko, Enugu, Ibadan, Ikeja, Jos, Kaduna, Kano, Port Harcourt, and Yola. ¹⁴



Infrastructure

- Nigeria's transmission network comprises of high voltage substations with a transmission wheeling capacity of 7,500 MW and over 20,000 km of transmission lines. ¹⁵
- The transmission losses stand at 7.4% across the network and is high as compared to emerging countries benchmark of 2-6%. ¹⁵
- The transmission network system requires a significant amount of investment for increasing wheeling capacity, improving reliability, and stability, and reducing transmission losses. ¹⁵



Financing

- In 2022, the AfDB approved the Leveraging Energy Access Finance Framework (LEAF) under which the bank will commit up to USD 164 Mn to promote decentralized RE in Nigeria. ¹⁶
- The Nigeria Energy Access Fund (NEAF), a climate impact fund of USD 50-60 Mn, will undertake equity/quasi-equity investments in small- to medium-scale sustainable energy projects. ¹⁷
- The AfDB approved a USD 1.5 Mn grant from the Sustainable Energy Fund for Africa (SEFA) to support the Nigerian Government's implementation of Phase 1 of the Jigawa 1-GW IPP Solar Procurement Program. ¹⁸



Energy Imperatives

- In 2020, Nigeria's per capita electricity consumption stood at 0.14 MWh, which is significantly lower in comparison to the global average of 3.31 MWh in 2020. ²¹
- The total installed capacity in the country stood at 11,681 MW in 2019. ¹⁹
- The price of electricity in the country stood at 13.6 US Cents/kWh as of 2019. ²²