# Ghana

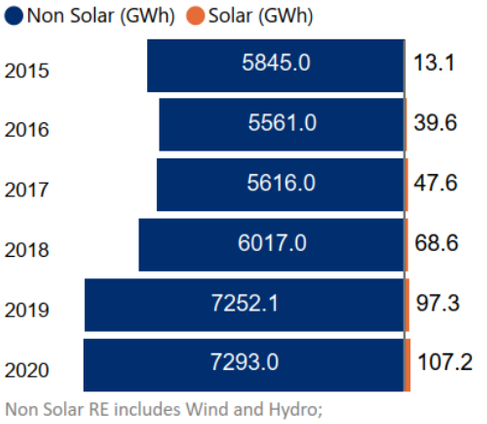
Africa

Ease of doing Solar classification

**Influencer**

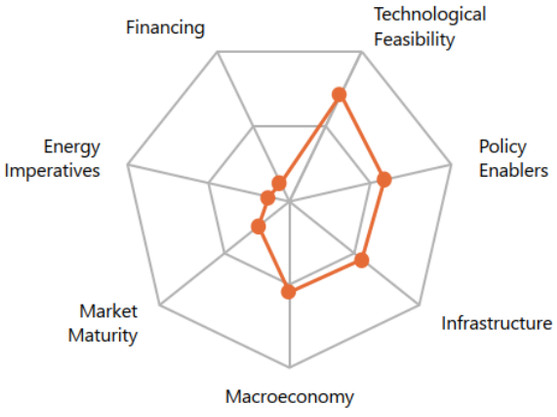
| Electricity Consumption in kWh/capita (2020) | Average PVout in kWh/kWp/day (2020) | Cumulative Solar Capacity in MW (2021) |
|---|---|---|
| **647.2** | **4.0** | **107.9** |
| **Getting Electricity Score (2020)** | **NDC Target by 2030 in $MtCO_2e$ (base year 2019)** | **Human Development Index (2021)** |
| **77.4** | **64.0** | **0.6** |

## Renewable Energy Generation by Source

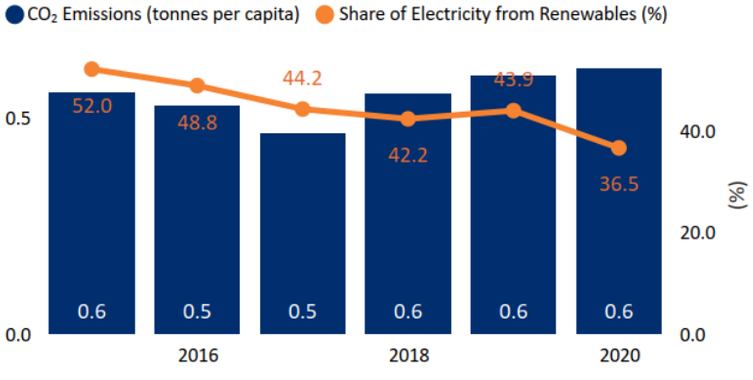



Non Solar RE includes Wind and Hydro;

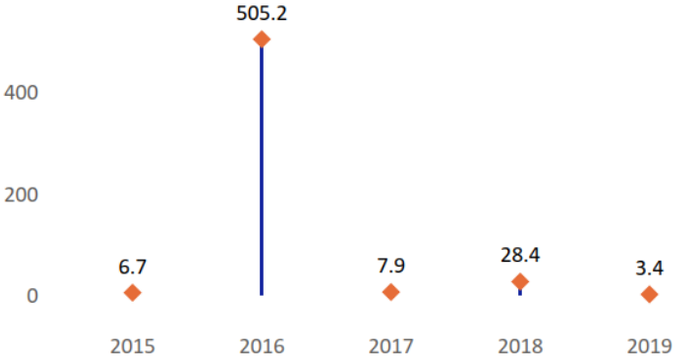
## Performance against 7 Drivers



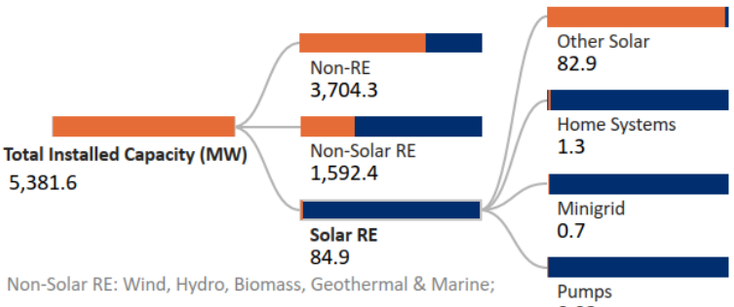

## $CO_2$ Emissions vs Electricity share from Renewables




## International Finance received for Clean Energy (Million US Dollars)




## Installed Capacity by Source (2019)

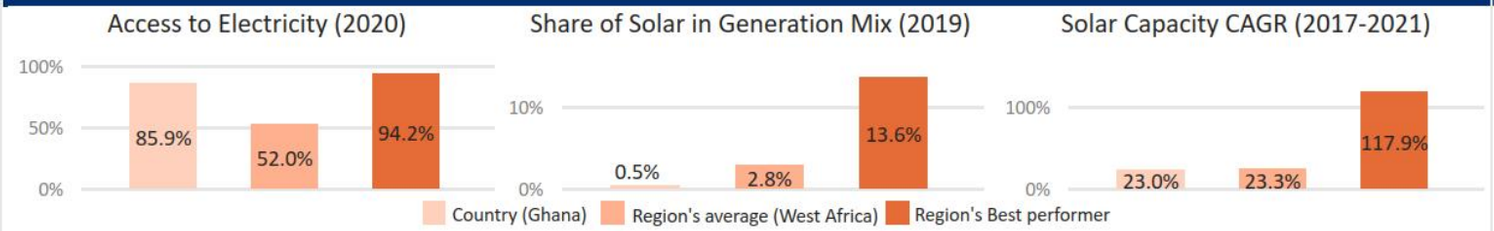



Non-Solar RE: Wind, Hydro, Biomass, Geothermal & Marine;
Non-RE: Coal, Natural Gas, Nuclear, Oil, etc.;
Other Solar: Utility Scale Solar, Rooftop etc.;
Data not available for other Solar RE segments;

## Support for Renewables (2020)

| Feed-in-Tariffs for renewable energy supply to the grid? | Net metering/Gross metering policies and regulations? |
|---|---|
| **Yes** | **Yes** |
| **Renewable Energy Certificates?** | **Renewable Purchase Obligation?** |
| **Yes** | **Yes** |

## Country's regional performance and characteristics




**Areas of Strength** → Policy Enablers; Technological Feasibility

**Areas of Improvement** → Energy Imperatives; Financing

## Key Insights

| Drivers | Insights |
|---|---|
| Macro-economy | •Ghana is a lower middle-income country with a GDP per capita (PPP) of USD 5,971 in 2021. [1, 2]<br>•GDP (Real) grew at an annual rate of 4.2% in 2021 and it is estimated to increase by 5.2% in 2022. [3]<br>•The inflation rate in the country marginally increased to 10.0% in 2021 from 9.9% levels in 2020. [4]<br>•The fiscal deficit in the country narrowed down to 12.1% of GDP in 2021 from 15.2% levels in 2020. [4] |
| Policy enablers | •The Ministry of Energy is responsible for energy policy formulation and coordination of activities in the energy sector. [5]<br>•The Government of Ghana enacted the Renewable Energy Act of 2011 to provide an enabling environment and foster the development of RE resources in the country. [6]<br>•Ghana Public Utilities Regulatory Commission established feed-in tariff rates for electricity generated from RE sources.[7]<br>•The 2010 Ghana National Energy Policy encompasses that RE development shall mainly focus on the vast mini hydro potential available in the country.[8] |
| Technological Feasibility | •Ghana receives high levels of solar irradiation of 5.1 kWh/m$^2$/day and a specific yield of 4.0 kWh/kWp/day indicating strong technical feasibility for solar in the country. [9]<br>•Ghana receives, on an average, 2,377 hours of sunlight per year indicating a strong potential of solar. [10]<br>•The UN Environment program is currently active in Ghana and is working on the introduction of Electric Light Duty Vehicles. [11] |
| Market Maturity | •85.9% population in Ghana had access to electricity as of 2020. [12]<br>•The Public Utilities Regulatory Commission (PURC) is a multi-sector regulator to regulate the provision of electricity and water utility services in Ghana. [13]<br>•Ghana Grid Company (GRIDCo) is responsible for the transmission of electricity from generating companies to bulk customers, which include the Electricity Company of Ghana (ECG) and Northern Electricity Distribution Company (NEDCo). [14]<br>•Ghana is a member of the West African Power Pool (WAPP), which aims to integrate the national power systems into a unified regional electricity market. [15] |
| Infrastructure | •GRIDCo's transmission system comprises approximately 4,000 ckm of lines and 38 sub-stations. There are 75 kms of 225 kV lines and 100 km of 69 kV line in the Volta Region of Ghana. [16]<br>•NEDCo's distribution network consists of 5,488 km of medium voltage lines and 7,832 km of low voltage (415 V) lines connecting 24 Bulk Supply Points. [17]<br>•A 161 kV double circuit line and a single circuit 225 kV transmission line provide interconnection to Togo and Benin in the east and Cote d'Ivoire to the west. [16] |
| 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 Ghana. [18]<br>•The AfDB has approved a USD 1.5 Mn grant from its Sustainable Energy Fund for Africa (SEFA) to give thrust to Ghana's RE investment drive. [19]<br>•The Government of Ghana has received financing from the African Development Bank in the form of a loan to cover the cost of the Electricity Distribution System Reinforcement and Extension Project (EDSREP). [20] |
| Energy Imperatives | •The total installed capacity in the country stood at 5,381.6 MW in 2019. [21]<br>•In 2020, the per capita electricity consumption of 0.65 MWh which is significantly lower in comparison to the global average of 3.31 MWh. [23]<br>•The price of electricity in the country was 22.2 US Cents/kWh as of 2019. [24] |