



Zambia

Africa

Ease of doing Solar classification



Influencer

Electricity Consumption
in kWh/capita (2020)

869.2

Average PVout in kWh/
kWp/day (2020)

4.8

Cumulative Solar Capacity in MW
(2021)

96.4

Getting Electricity Score (2020)

62.1

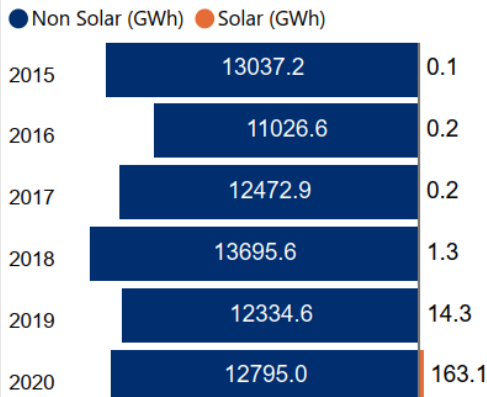
NDC Target by 2030 in %
(base year 2010)

25.0

Human Development Index (2021)

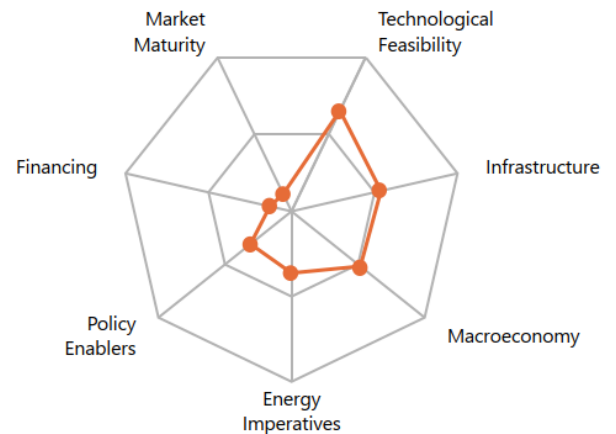
0.6

Renewable Energy Generation by Source

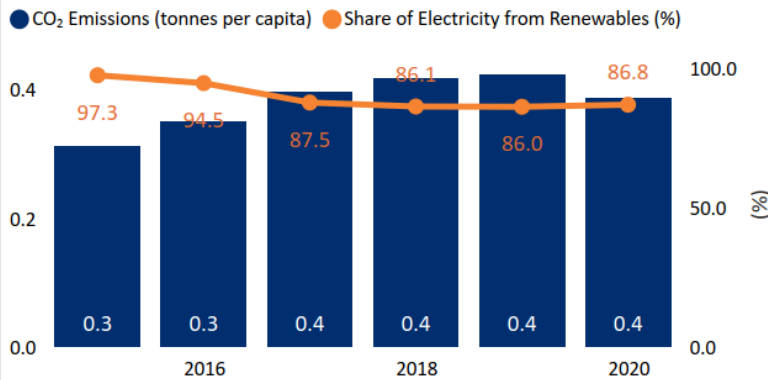


Non Solar RE includes Wind and Hydro;

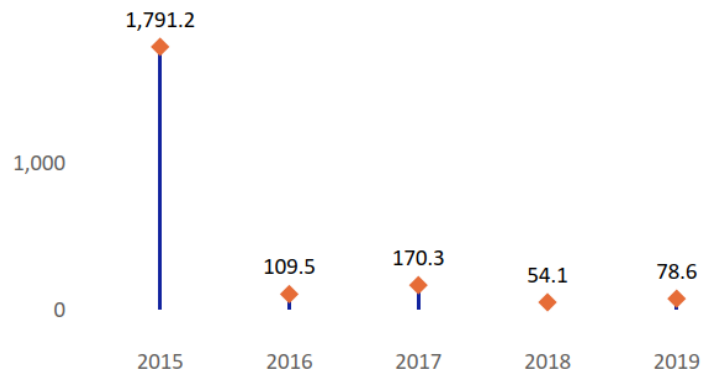
Performance against 7 Drivers



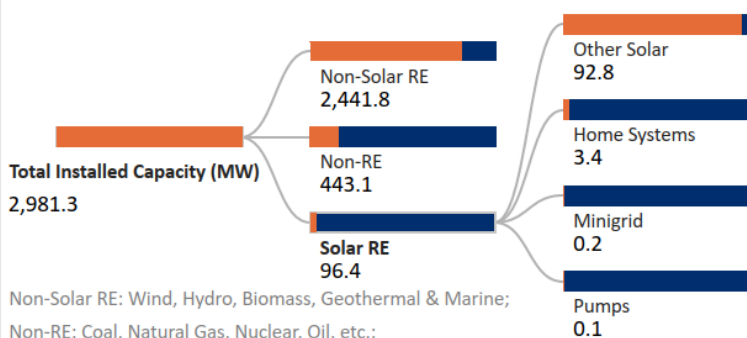
CO₂ Emissions vs Electricity share from Renewables



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?

Yes

Net metering/Gross metering policies and regulations?

No

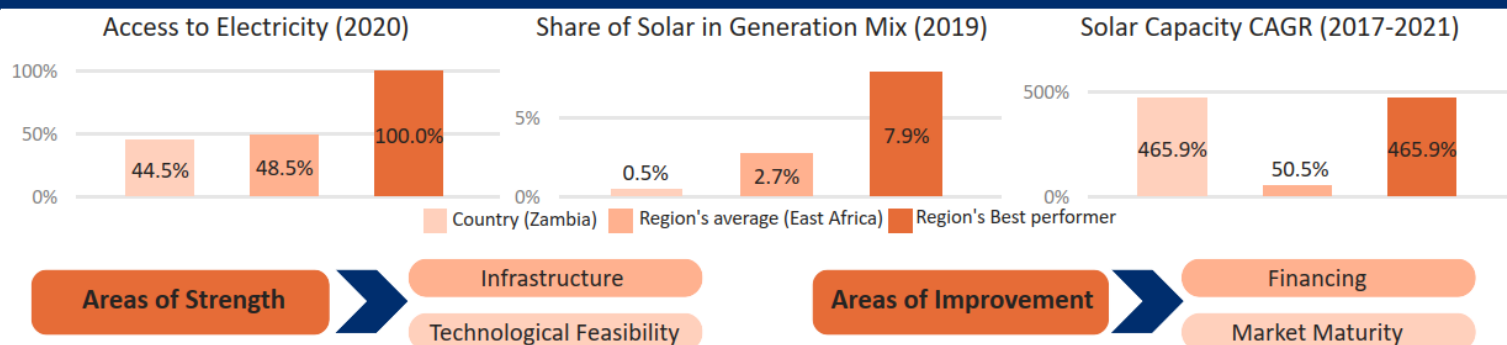
Renewable Energy Certificates?

No

Renewable Purchase Obligation?

No

Country's regional performance and characteristics



Key Insights

Drivers

Insights



Macro-economy

- Zambia is a lower middle-income country ¹ with a GDP per capita (PPP) of USD 3,556 in 2021.²
- GDP (Real) grew at an annual rate of 4.3% in 2021 and it is estimated to grow by another 3.1% in 2022. ³
- The inflation rate in the country increased to 22.1% in 2021 from 15.7% levels in 2020. ⁴
- The fiscal deficit narrowed down from 13.2% in 2020 to 8.4% levels in 2021 despite a surge in COVID-19-related spending and revenue shortfalls. ⁴



Policy enablers

- The Ministry of Energy is responsible for framing energy policies and development of renewable energy sources in Zambia. ⁵
- Ministry of Green Economy and Environment is responsible for formulating and reviewing policies that promote investment towards low carbon, resource-efficient, and socially inclusive interventions. ⁶
- The National Energy Policy 2019 aims for an optimal energy resource utilization to meet Zambia's domestic and non-domestic needs at the lowest cost and to establish Zambia as a net exporter of energy. ⁷



Technological Feasibility

- Zambia receives very high levels of solar irradiation of 5.9 kWh/m²/day and a specific yield of 4.8 kWh/kWp/day indicating a very strong technical feasibility for solar in the country. ⁸
- The UN Environment program is currently active in Zambia and is working on the introduction of electric light duty vehicles. ⁹



Market Maturity

- 44.5% population in Zambia had access to electricity as of 2020. ¹¹
- ZESCO Limited is a vertically integrated electricity utility responsible for the generation, transmission, and distribution of electricity in Zambia. ¹²
- The Energy Regulation Board (ERB) is a statutory body responsible for regulating the energy sector in Zambia. ¹³
- Zambia is a member of the Southern African Power Pool (SAPP), which aims to be a fully integrated, competitive energy market and a provider of sustainable energy solutions in the region. ¹⁴



Infrastructure

- ZESCO consists of 56,000 km of distribution network with 3,779 km of 66 kV, 8,922 km of 33 kV, 23,667 km of 11 V, and 19,713 km of 400 V. ¹⁵
- 'Tanzania - Zambia Interconnector project' links the Tanzanian grid to Zambia's grid and includes a 620 km of 400 kV double circuit transmission line. ¹⁶
- The Distribution and Customer Services Directorate of Zambia aims at providing continuous and reliable service to over one million customers providing a 24/7 platform for the customer to report faults and other non-fault-related complaints. ¹⁵



Financing

- The AfDB-GCF framework includes technical assistance which seeks to support the Government of Zambia in its efforts to catalyze private investment for small-scale RE projects. ¹⁷
- The Government of Zambia received financing from the AfDB through the Sustainable Energy Fund for Africa (SEFA) and the Green Climate Fund (GCF) towards the RE Financing Framework. ¹⁸
- In 2018, the AfDB approved a USD 50 Mn for financing small-scale RE projects in Zambia to diversify Zambia's energy generation which is heavily reliant on hydroelectricity. ¹⁹



Energy Imperatives

- In 2020, Zambia's per capita electricity consumption stood at 0.87 MWh, which is significantly lower in comparison to the global average of 3.31 MWh. ²²
- The total installed capacity in the country stood at 2,981.3 MW in 2019. ²⁰
- The total installed capacity of Solar PV witnessed a CAGR of 465.9% between 2017-2021 reaching 96.424 MW in 2021 from 0.094 MW levels in 2017. ²¹
- The price of electricity in the country stood at 4.70 US Cents/kWh in 2019. ²³