



Rwanda

Africa

Ease of doing Solar classification



Influencer

Electricity Consumption in kWh/capita (2020)

64.1

Average PVout in kWh/kWp/day (2020)

4.1

Cumulative Solar Capacity in MW (2021)

38.3

Getting Electricity Score (2020)

82.3

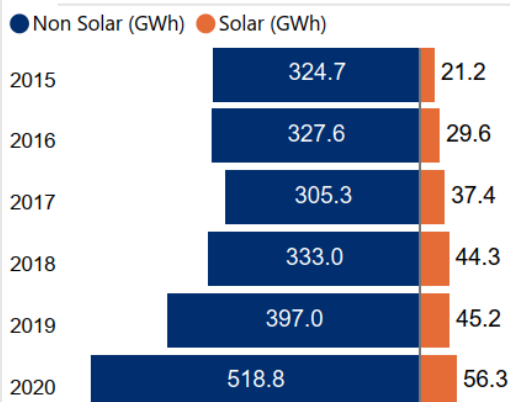
NDC Target by 2030 in %

38.0

Human Development Index (2021)

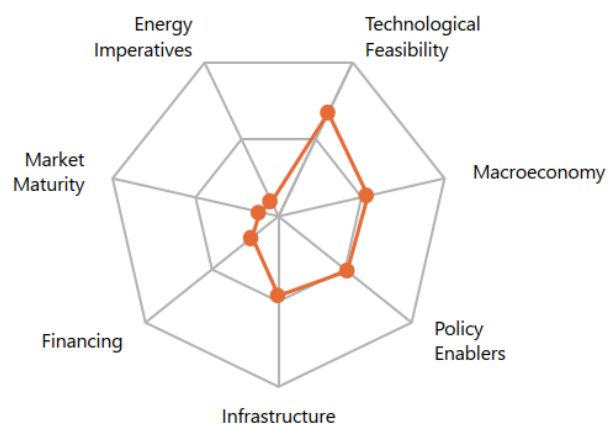
0.5

Renewable Energy Generation by Source

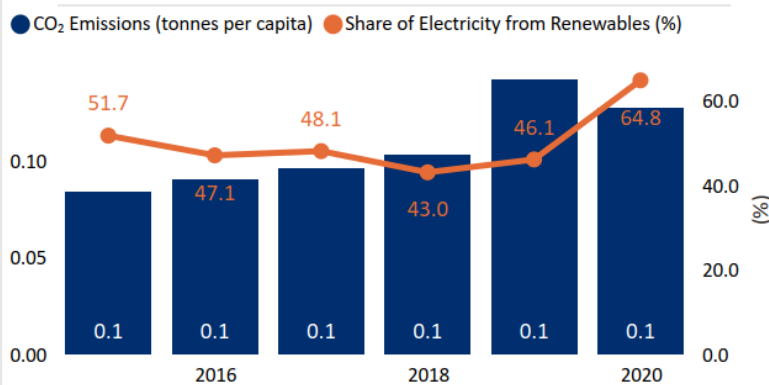


Non Solar RE includes Wind and Hydro;

Performance against 7 Drivers



CO₂ Emissions vs Electricity share from Renewables



Fiscal Incentives & Public Financing for Renewables (2020)

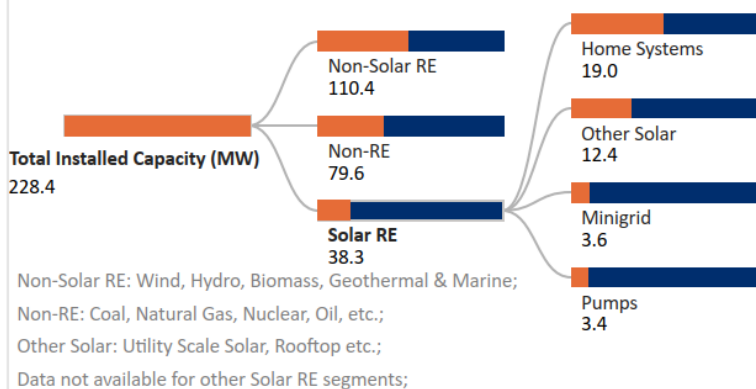
Investment or production tax credits?

Yes

Public investment, loans, grants, capital subsidies or rebates?

Yes

Installed Capacity by Source (2019)



Support for Renewables (2020)

Feed-in-Tariffs for renewable energy supply to the grid?

Yes

Net metering/Gross metering policies and regulations?

No

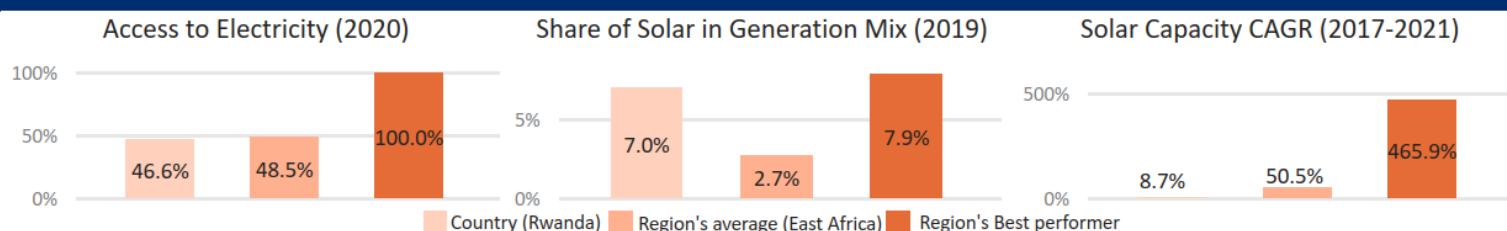
Renewable Energy Certificates?

No

Renewable Purchase Obligation?

No

Country's regional performance and characteristics



Areas of Strength

Macroeconomy
Technological Feasibility

Areas of Improvement

Energy Imperatives
Market Maturity

Key Insights

Drivers

Insights



Macroeconomy

- Rwanda is a low-income country¹ with a GDP per capita (PPP) of USD 2,460 in 2021.²
- GDP (Real) grew at an annual rate of 10.2% in 2021 and it is estimated to grow by 6.4% in 2022.³
- The current account deficit widened from 12.2% of GDP in 2020 to 13.5% levels of GDP in 2021 due to higher oil prices and increased imports of capital goods.⁴
- The debt-to-GDP ratio in the country climbed from 71.2% in 2020 to 74.6% levels in 2021.⁴



Policy enablers

- The Ministry of Infrastructure (MININFRA) is responsible for initiating programs to increase the access to affordable energy and the development of policies and strategies in the country.⁵
- The Rwanda Energy Policy highlights measures that need to be undertaken to promote energy efficiency through a combination of approaches such as regulations, new codes, and standards, and the introduction of economic incentives such as subsidies for installation of solar water heaters.⁶
- Rwanda Utilities Regulatory Agency (RURA) regulates the electricity sector, sets the tariff and has recently published the National Renewable Energy Feed in Tariff in Rwanda.⁷



Technological Feasibility

- Rwanda receives high levels of solar irradiation of 4.9 kWh/m²/day and a specific yield of 4.1 kWh/kWp/day indicating strong technical feasibility for solar in the country.⁸
- Power Africa advises the Rwandan government on the design and implementation of its rural electrification strategy, which supports the roll-out of solar home systems and mini-grids.⁹
- The UN Environment program is currently active in Rwanda and is working on the introduction of electric two and three wheelers.¹⁰



Market Maturity

- 46.6% population in Rwanda had access to electricity as of 2020.¹¹
- The Energy Utility Corporation Limited (EUCL) is responsible for the generation, transmission, and distribution of electricity to end-users.¹²
- Rwanda is a member of the Eastern African Power Pool (EAPP) which aims to optimize the available energy resources and reduce electricity costs.¹³



Infrastructure

- Rwanda's transmission network comprises of 3 main voltage levels: 70 kV, 110 kV, and 220 kV transmission lines.¹⁴
- Of the total network, 648.28 km (66.6%) are 110 kV and 324.85km (33.4%) are 220 kV. Many 70 kV lines were upgraded to 110 kV to improve network reliability and power supply stability.¹⁴
- The distribution network suffers from poor reliability, resulting from underinvestment due to lack of clear plans in the distribution part of the network.¹⁵



Financing

- In 2022, the AfDB approved two loans amounting to USD 180 Mn to co-finance a major energy project, which will extend electricity access to rural areas and reduce greenhouse gas emissions in Rwanda.¹⁶
- The Government of Rwanda signed a €229.20 Mn funding agreement with the AfDB to support the country's program to improve electricity supply and expand access to electricity under the Scaling Up Electricity Access Program Phase II (SEAP II).¹⁷
- In 2021, the AfDB approved USD 84.22 Mn in loans and grants to electrify nearly 80,000 rural households.¹⁸



Energy Imperatives

- In 2020, Rwanda's per capita electricity consumption stood at 0.06 MWh, which is significantly lower in comparison to the global average of 3.31 MWh.²⁰
- The total installed capacity in the country stood at 235.61 MW in 2021.¹⁵
- The price of electricity in the country stood at 13.9 US Cents/kWh as of 2019.²¹