



Liberia

Africa

Ease of doing Solar classification



Potential

Electricity Consumption in kWh/capita (2020)

176.0

Average PVout in kWh/kWp/day (2020)

3.9

Cumulative Solar Capacity in MW (2021)

2.6

Getting Electricity Score (2020)

39.1

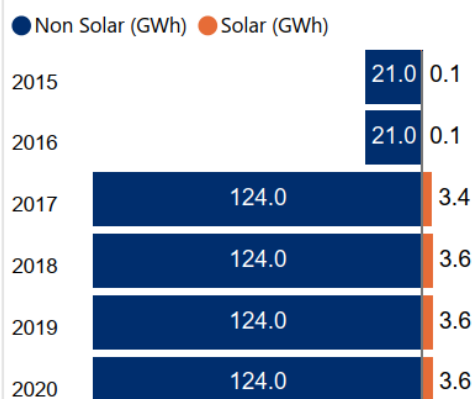
NDC Target by 2030 in %

64.0

Human Development Index (2021)

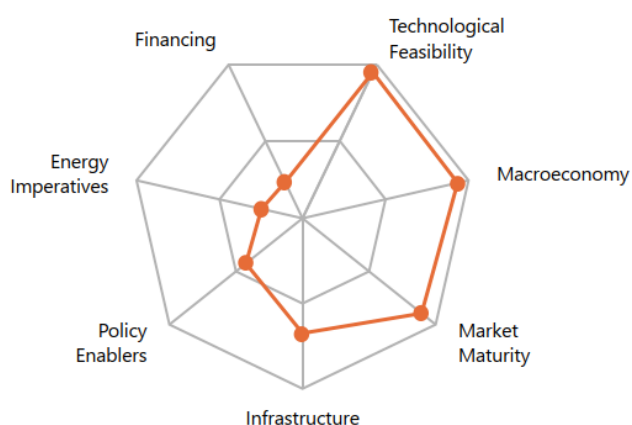
0.5

Renewable Energy Generation by Source

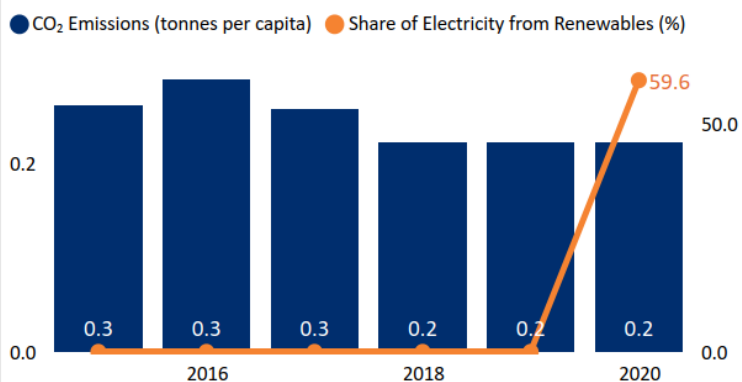


Non Solar RE includes Wind and Hydro;

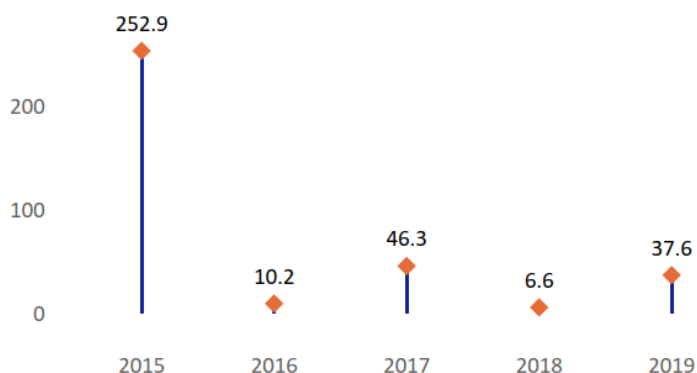
Performance against 7 Drivers



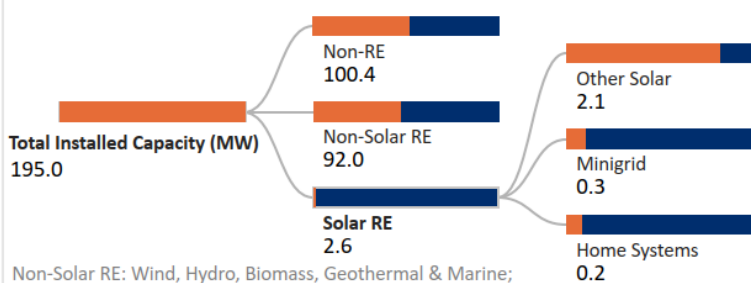
CO₂ Emissions vs Electricity share from Renewables



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)

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

No

Net metering/Gross metering policies and regulations?

No

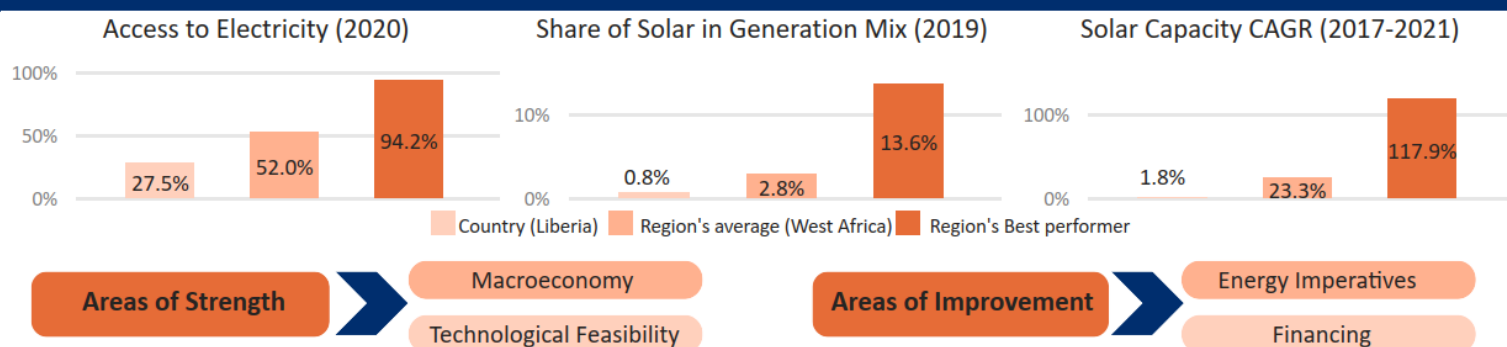
Renewable Energy Certificates?

No

Renewable Purchase Obligation?

No

Country's regional performance and characteristics



Key Insights

Drivers

Insights



Macroeconomy

- Liberia is a low-income country with a GDP per capita (PPP) of USD 1,564 in 2021. ^{1,2}
- GDP (Real) grew at an annual rate of 4.2% in 2021 and it is estimated to increase by 4.5% in 2022. ³
- The inflation rate in the country declined to 8.0% in 2021 from 17% levels in 2020. ⁴
- Total public debt in the country increased to 54.7% of GDP in 2021 from 47.9% levels in 2020 reflecting increased borrowing. ⁴



Policy enablers

- The Ministry of Mines & Energy (MME) is the statutory agency that is responsible for policy formulation in the energy sector of the country. ⁵
- The 2015 Electricity Law of Liberia established the legal and regulatory framework for the generation, transmission, distribution, and sale of electricity within Liberia. ⁶
- The Rural and Renewable Energy Agency (RREA) is responsible to accelerate the economic transformation of rural Liberia by promoting commercial development and supply of modern energy products and services to rural areas. ⁷



Technological Feasibility

- Liberia receives high levels of solar irradiation of 4.8 kWh/m²/day and a specific yield of 3.9 kWh/kWp/day indicating a strong technical feasibility for solar in the country. ⁸
- Liberia receives an average of 1,662 hours of sunlight per year. It is sunny 37.9% of daylight hours while 62.1% of daylight hours are likely cloudy or with shade, haze, or low sun intensity. ⁹
- In June 2017, five remote communities in Liberia that got solar minigrid as part of the project 'Light Up Our Futures' funded by EU. ¹⁰



Market Maturity

- 27.5% population in Liberia had access to electricity as of 2020. ¹¹
- The Liberia Electricity Corporation (LEC) is a public utility entity with a mandate to produce and supply electric power to the entire nation. ¹²
- Liberia Electricity Regulatory Commission (LERC) functions as the regulator that issue licenses, approve tariffs, ensure liberalization of the sector, and ensure a vibrant electricity sector. ¹³
- Liberia is a member of the West African Power Pool (WAPP), which aims to integrate the national power systems into a unified regional electricity market. ¹⁴



Infrastructure

- Liberia West Africa Power Pool (WAPP) transmission project plans to interconnect Ivory Coast, Liberia, Sierra Leone and Guinea through a 225 kV transmission line. ¹⁵
- Liberia Accelerated Electricity Expansion Project (LACEEP) entails the construction of 66/33 kV sub-station in Kakata, expansion of the existing 66/22 kV sub-station in Paynesville, and construction of distribution lines in communities in Paynesville and Kakata. ¹⁶



Financing

- The Liberia Electricity Sector Strengthening and Access Project (LESSAP) is the first project of a Multi-phase Programmatic Approach (MPA) where USD 180 Mn in IDA support is planned. ¹⁷
- The Climate Investment Funds (CIF) awarded Liberia a grant of USD 23.25 Mn to help transform country's RE sector. ¹⁸



Energy Imperatives

- The total installed capacity in the country stood at 195 MW in 2019. ¹⁹
- The total installed capacity of Solar PV witnessed a CAGR of 1.8% between 2017-2021 reaching 2.6 MW in 2021 from 2.4 MW levels in 2017. ²⁰
- In 2020, the per capita electricity consumption stood at 0.18 MWh, which is significantly lower in comparison to the global average of 3.31 MWh. ²¹
- The price of electricity in the country was 39 US Cents/kWh as of 2019. ²²