



South Sudan

Africa

Ease of doing Solar classification



Progressive

Electricity Consumption in kWh/capita (2020)

47.3

Average PVout in kWh/kWp/day (2020)

4.5

Cumulative Solar Capacity in MW (2021)

1.3

Getting Electricity Score (2020)

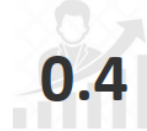


0

NDC Target by 2030 in % (base year 2017)

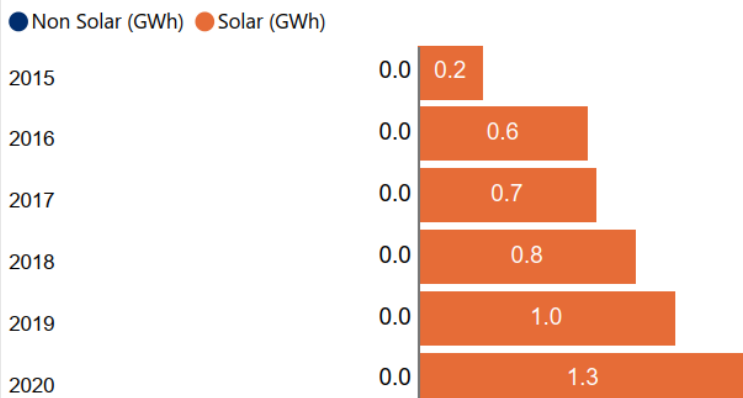
18.0

Human Development Index (2021)



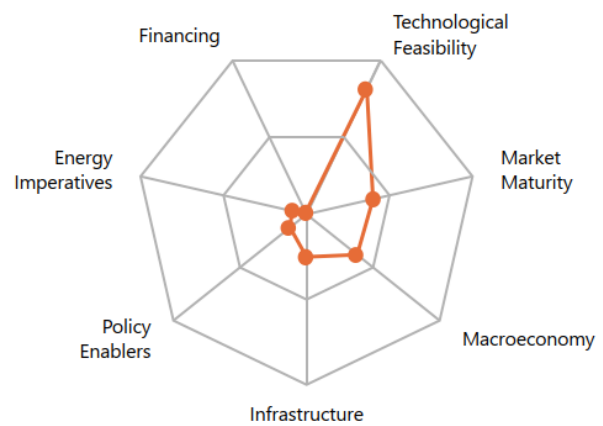
0.4

Renewable Energy Generation by Source

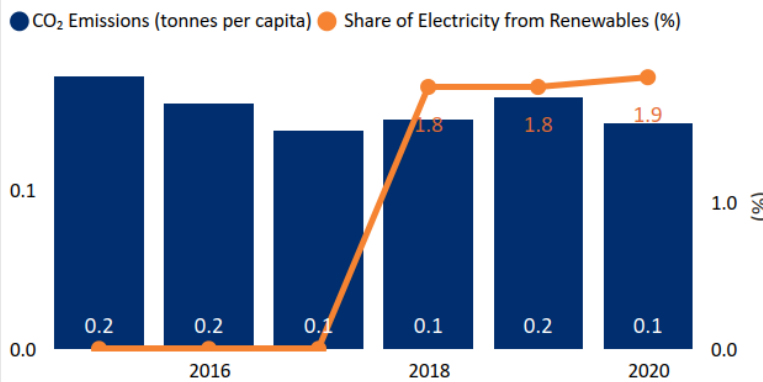


Non Solar RE includes Wind and Hydro;

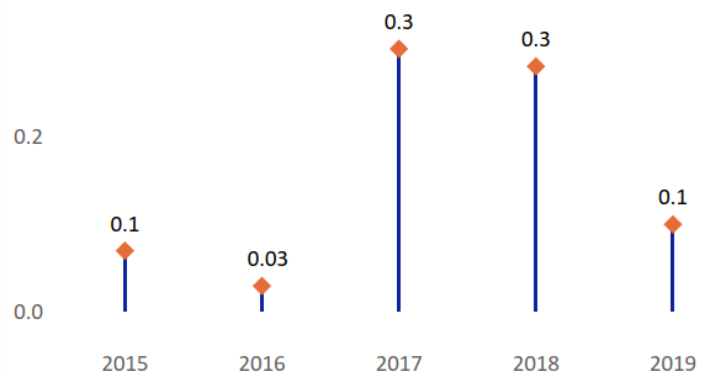
Performance against 7 Drivers



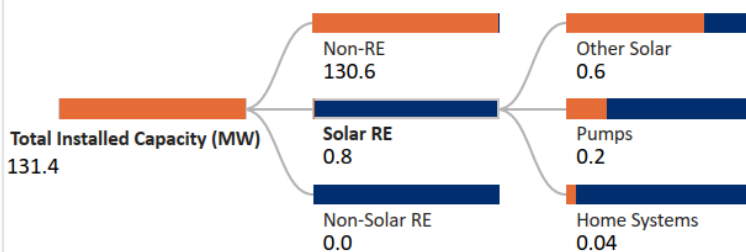
CO₂ Emissions vs Electricity share from Renewables



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

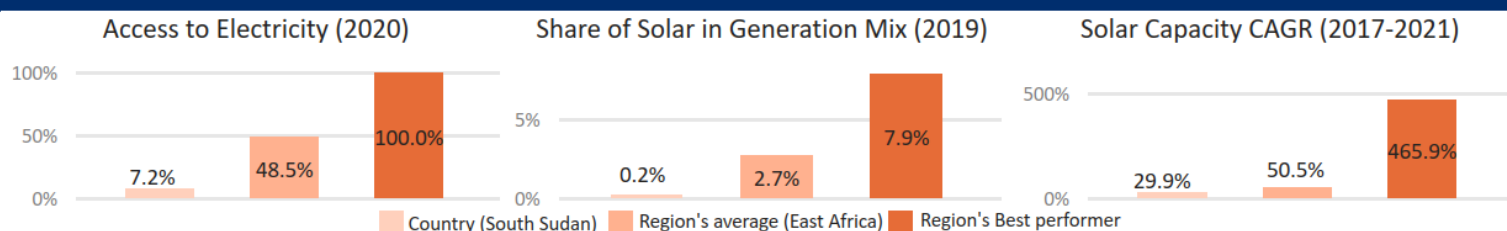
Renewable Energy Certificates?

No

Renewable Purchase Obligation?

No

Country's regional performance and characteristics



Areas of Strength

Market Maturity
Technological Feasibility

Areas of Improvement

Energy Imperatives
Financing

Key Insights

Drivers

Insights



Macro-economy

- South Sudan is a low-income country¹ with the oil sector as the dominant contributor to the economy.²
- GDP (Real) grew at an annual rate of 5.3% in 2021 and it is estimated to increase by 6.5% in 2022.³
- The inflation rate in the country reduced to 5.3% in 2021 from 24% levels in 2020.⁴
- The fiscal deficit in the country narrowed to 6.7% of GDP in 2021 from 9.8% levels in 2020.²



Policy enablers

- In 2021, South Sudan prepared second Nationally Determined Contribution (SNDC) which prioritizes the country's transition to a low-carbon economy and framing policies/incentives for private investments in RE generation.²
- South Sudan National Electricity Policy (SSNEP) outlines the framework for the development and operation of the Electricity Supply Industry (ESI) and defines the scope for Public-Private Partnerships (PPPs).⁵



Technological Feasibility

- South Sudan receives very high levels of solar irradiation of 5.7 kWh/m²/day and a specific yield of 4.5 kWh/kWp/day indicating a very strong technical feasibility for solar in the country.⁶
- Variable Renewable Electricity (VRE) plus-storage projects are in the planning phase in South Sudan including a 20 MW solar park coupled with a 35 MWh storage system.^{7,8}
- In 2021, South Sudan installed a solar rooftop-diesel system for the Upper Nile University of Malakal in the country.⁹



Market Maturity

- 7.2% population in South Sudan had access to electricity as of 2020.¹⁰
- South Sudan Electricity Regulation Authority is the energy regulator in the country.¹¹
- The South Sudan Electricity Corporation (SSEC) is responsible for the generation, transmission and sale of electricity to distributors.¹¹
- South Sudan is a member of the Eastern African Power Pool (EAPP) which aims to optimize the available energy resources and reduce electricity costs in the region.¹²



Infrastructure

- Nile Equatorial Lakes Subsidiary Action Program (NELSAP) is planning to construct a 222 km power transmission line at 220 kV from Malakal to Bentiu in South Sudan.¹³
- As of 2020, South Sudan is planning to construct a 400 kV Juba –Nimule transmission line with a network length of 170 km and associated substations in the country.¹⁴
- Power Distribution System Rehabilitation and Expansion Project (PDSRE) aims to strengthen the distribution networks in Juba to provide a reliable electricity supply in the country.¹⁵



Financing

- In 2020, the AfDB approved financing for the Republic of South Sudan towards the cost of the Juba Power Distribution System Rehabilitation and Expansion Project.¹⁴
- In 2019, the African Export-Import Bank financed USD 45 Mn to build the country's first large-scale PV power project.¹⁶



Energy Imperatives

- In 2020, South Sudan's per capita electricity consumption stood at 0.05 MWh, which is significantly lower in comparison to the global average of 3.31 MWh.¹⁹
- The total installed capacity in the country stood at 131.4 MW in 2019.¹⁷
- The total installed capacity of Solar PV witnessed a CAGR of 29.9% reaching 1.278 MW in 2021 from 0.449 MW levels in 2017.¹⁸