



# Uganda

Africa

Ease of doing Solar classification



## Influencer

Electricity Consumption in kWh/capita (2020)

### 102.1

Average PVout in kWh/kWp/day (2020)

### 4.5

Cumulative Solar Capacity in MW (2021)

### 91.7

Getting Electricity Score (2020)

### 48.4

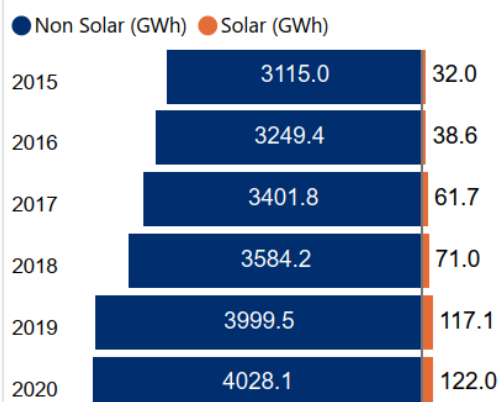
NDC Target by 2030 in % (base year 2015)

### 24.7

Human Development Index (2021)

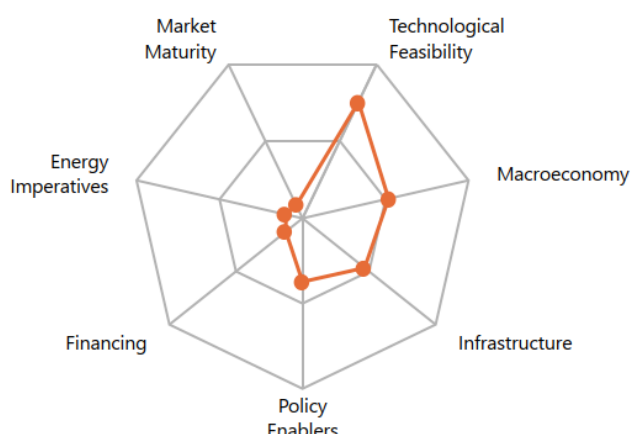
### 0.5

### Renewable Energy Generation by Source

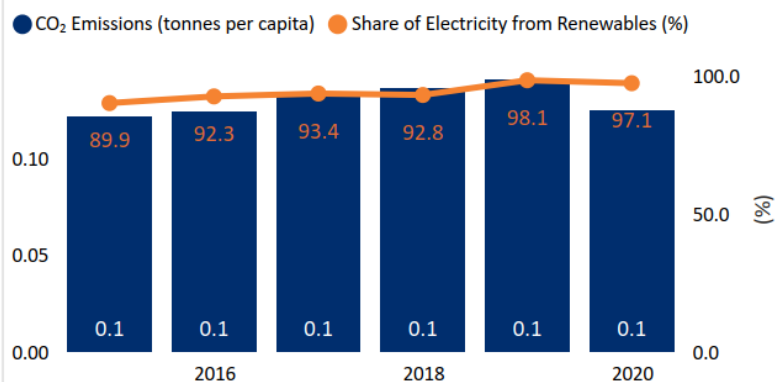


Non Solar RE includes Wind and Hydro;

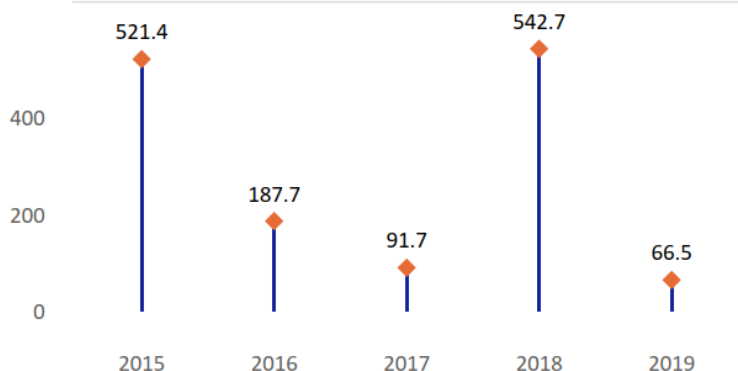
### Performance against 7 Drivers



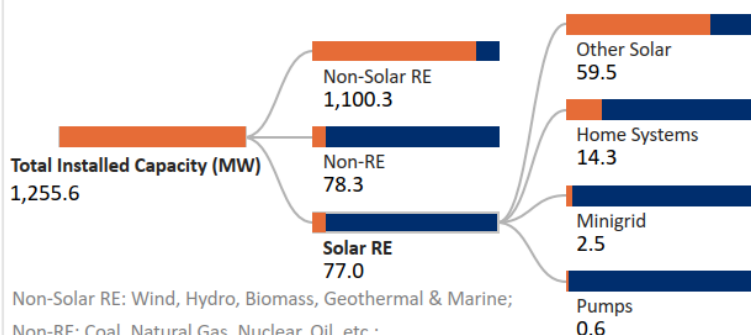
### CO<sub>2</sub> Emissions vs Electricity share from Renewables



### 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

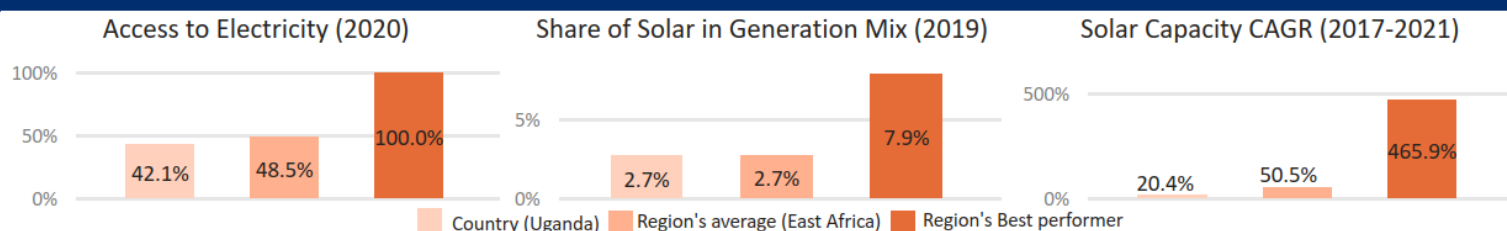
Renewable Energy Certificates?

## No

Renewable Purchase Obligation?

## No

## Country's regional performance and characteristics



### Areas of Strength

Macroeconomy  
Technological Feasibility

### Areas of Improvement

Energy Imperatives  
Market Maturity

## Key Insights

### Drivers

### Insights



Macroeconomy

- Uganda is a lower-income country<sup>1</sup> with a GDP per capita (PPP) of USD 2,468 in 2021.<sup>2</sup>
- GDP (Real) grew at an annual rate of 5.1% in 2021 and it is estimated to grow by 4.9% in 2022.<sup>3</sup>
- The inflation rate in the country has eased to 2.2% in 2021 from 2.8% in 2020.<sup>4</sup>
- The fiscal deficit in the country has reduced to 7.5% of GDP in 2021 from 9.5% in 2020.<sup>5</sup>



Policy enablers

- The Ministry of Energy and Mineral Development (MEMD) is responsible for developing and implementing policies in the electricity sector.<sup>6</sup>
- The Ugandan REFIT program is aimed at fast-tracking RE projects and reducing tariffs for new projects on an annual basis within the limits of the maximum installed project capacity.<sup>7</sup>
- The Electricity Connection Policy aims at increasing Uganda's electricity access to 60% by 2027 through connection subsidies for consumers located close to the existing network.<sup>8</sup>



Technological Feasibility

- Uganda receives high levels of solar irradiation of 5.3 kWh/m<sup>2</sup>/day and a specific yield of 4.5 kWh/kWp/day indicating strong technical feasibility for solar in the country.<sup>9</sup>
- The UN Environment program is currently active in Uganda and is working towards the introduction of electric two and three-wheelers.<sup>10</sup>
- The National Development Plan III aims to install 1,500 mini-grids in the next five years, and the current National Electrification Strategy has plans to install about 2,700 mini-grids in the country by 2030.<sup>11</sup>



Market Maturity

- 42% population in Uganda had access to electricity as of 2020.<sup>12</sup>
- The Electricity Regulatory Authority (ERA) is responsible for regulating the Generation, Transmission, Distribution, Sale, Export, and Import of Electricity in Uganda.<sup>13</sup>
- Uganda Electricity Transmission Company Limited (UETCL) owns, operates and develops the High Voltage (above 33 kV) Transmission Grid.<sup>14</sup>
- Uganda Electricity Distribution Company Limited (UEDCL) distributes and supplies electricity to consumers in Uganda.<sup>15</sup>



Infrastructure

- UETCL's transmission network consists of 2,989 km of HV lines with 1,008 km of 220 kV, 1,946km of 132 kV, and 35km of 66 kV transmission lines. The length of the transmission network has more than doubled over the past 20 years.<sup>14</sup>
- UETCL's transmission network consists of 25 substations with a total transformation capacity of 2,829 MVA.<sup>14</sup>
- UETCL is implementing new power transmission projects for strengthening Power Evacuation, Regional Interconnection, and Grid Expansion and Reinforcement in Uganda.<sup>14</sup>



Financing

- The Climate Investment Fund (CIF) through its Scaling up Renewable Energy Program (SREP) has set an aim to enhance investments in solar photovoltaic net-metering, mini-grids, and wind power.<sup>16</sup>
- The AfDB approved USD 2.3 Mn to kick-start future investments in decentralized power systems in rural and urban areas in Uganda.<sup>17</sup>
- The AfDB approved an African Development Fund (ADF) loan of USD 78.13 Mn to finance the 'Mbarara-Nkenda & Tororo-Lira Power Transmission Lines Project' in Uganda.<sup>18</sup>



Energy Imperatives

- In 2020, Uganda's per capita electricity consumption stood at 0.1 MWh, which is significantly lower in comparison to the global average of 3.31 MWh.<sup>21</sup>
- The total installed capacity in the country stood at 1255.6 MW in 2019.<sup>19</sup>
- The total installed capacity of solar PV witnessed a CAGR of 20.4% reaching 91.72 MW in 2021 from 43.61 MW levels in 2017.<sup>20</sup>
- The price of electricity in the country stood at 17.10 US Cents/kWh in 2019.<sup>22</sup>