
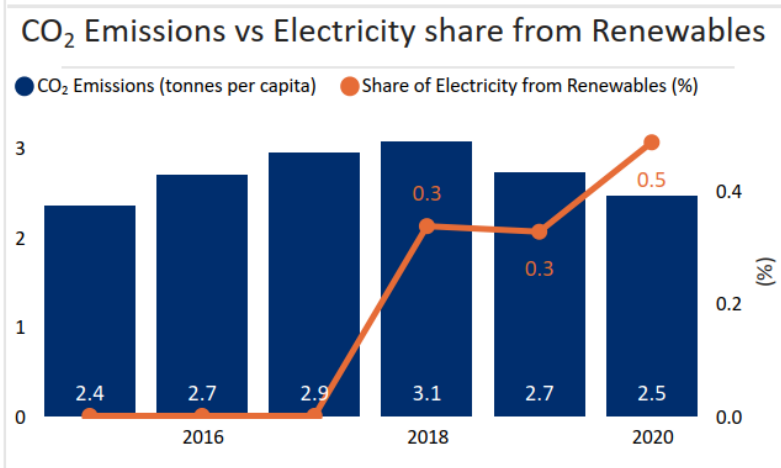
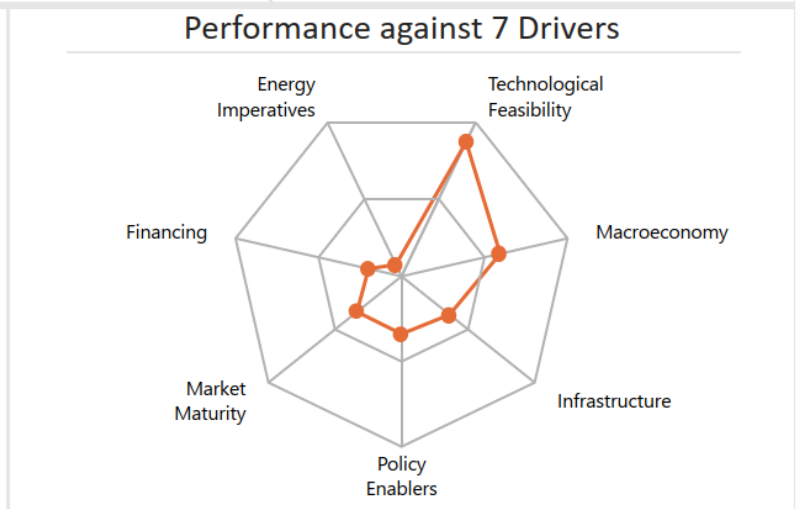
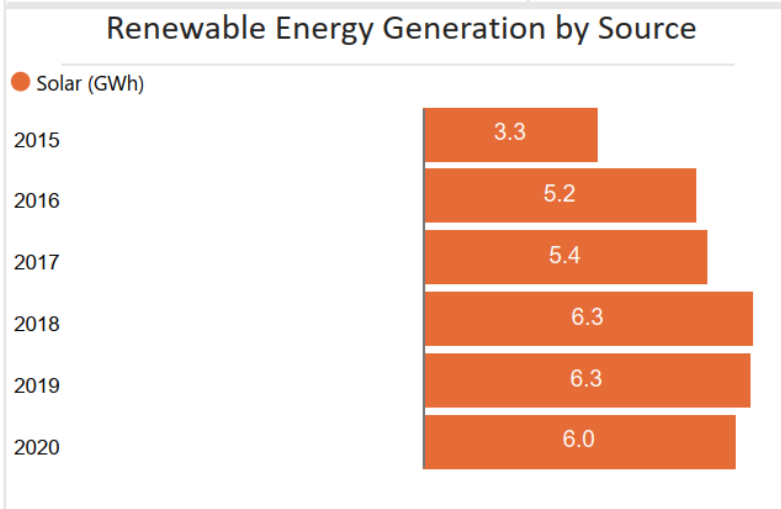
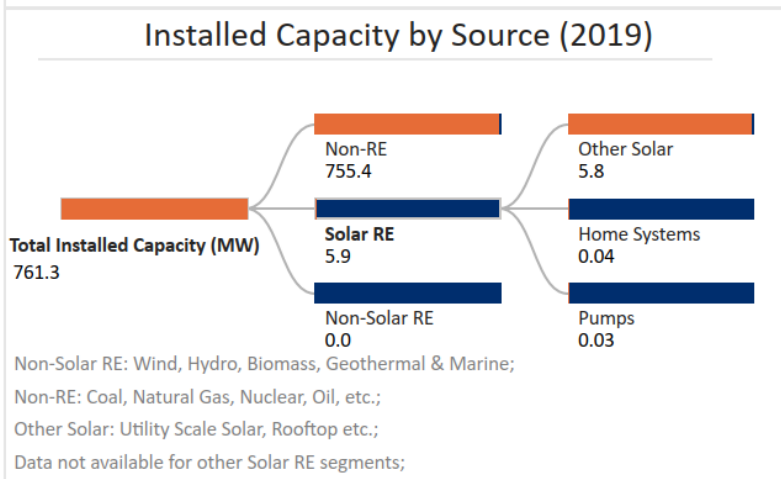
		<b>Botswana</b>	Ease of doing Solar classification  <b>Influencer</b>
		Africa	
Electricity Consumption in kWh/capita (2020) <b>871.7</b>	Average PVout in kWh/kWp/day (2020) <b>5.1</b>	Cumulative Solar Capacity in MW (2021) <b>5.9</b>	
Getting Electricity Score (2020) <b>59.5</b>	NDC Target by 2030 in % (base year 2010) <b>15.0</b>	Human Development Index (2021) <b>0.7</b>	



### Fiscal Incentives & Public Financing for Renewables (2020)

Investment or production tax credits?  
**No**

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



### Support for Renewables (2020)

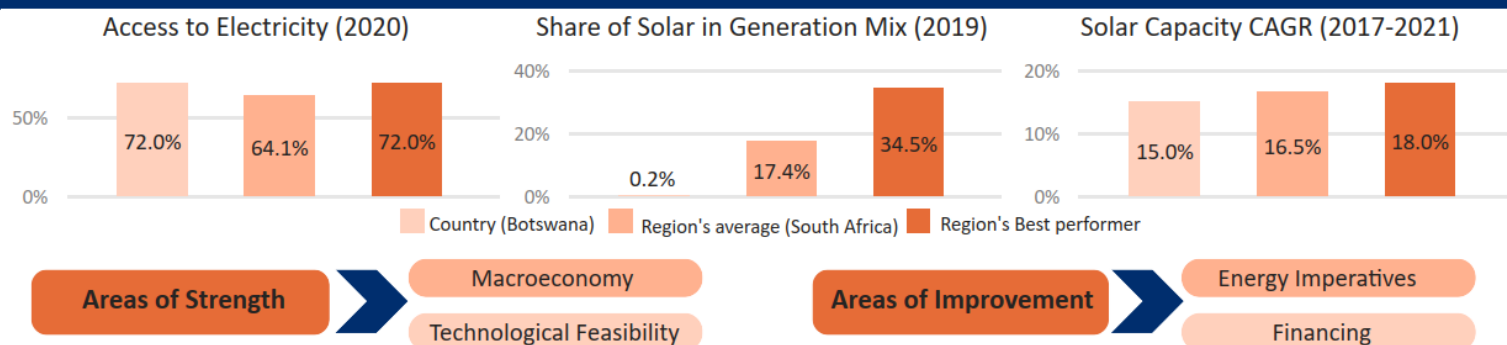
Feed-in-Tariffs for renewable energy supply to the grid?  
**No**

Net metering/Gross metering policies and regulations?  
**Yes**

Renewable Energy Certificates?  
**No**

Renewable Purchase Obligation?  
**No**

## Country's regional performance and characteristics



## Key Insights

### Drivers

### Insights



Macroeconomy

- Botswana is an upper middle-income country<sup>1</sup> having GDP per capita (PPP) of USD 16,304 as of 2021.<sup>2</sup>
- GDP (Real) grew at an annual rate of 12.5% in 2021 and it is estimated to grow by 4.3% in 2022.<sup>3</sup>
- Inflation rate in the country increased to 6.7% in 2021 from 2.0% levels in 2020.<sup>5</sup>
- Total public debt is estimated at 18.6% of GDP as of 2021<sup>4</sup> while the current account deficit narrowed to 1.9% of GDP in 2021 from 10.6% levels in 2020.



Policy enablers

- The country aims to meet 15% of its energy from RE by 2030, 36% by 2036, and 50% by 2040.<sup>6</sup>
- In 2020, the Government promulgated a 20-year Integrated Resource Plan (IRP) for electricity generation covering RE technologies such as solar PV, wind, concentrated solar thermal, and battery energy storage.<sup>6</sup>
- Botswana has strengthened climate finance resource mobilization through mechanisms such as the 2021 GCF program for RE and clean technology.<sup>4</sup>



Technological Feasibility

- The country receives high levels of solar irradiation of 6 kWh/m<sup>2</sup>/day and specific yield of 5.1 kWh/kWp/day, indicating a strong technical feasibility for solar in the country.<sup>8</sup>
- Government of Botswana through the Ministry of Investment, Trade, and Industry (MITI) aims to develop the local e-mobility industry to contribute towards reducing GHG emissions.<sup>10</sup>
- According to Africa Solar Industry Association (AFSIA), plans for green hydrogen projects in Botswana and Namibia have been quadrupled, from 1 GW to 5 GW of generation capacity.<sup>11</sup>



Market Maturity

- Botswana Energy Regulatory Authority (BERA) is responsible for providing an efficient energy regulatory framework for Electricity, Gas, Coal, Petroleum products, Solar and all forms of RE.<sup>12</sup>
- The overall energy policy framework is overseen by the Ministry of Minerals, Green Technology and Energy Security (MMGE).<sup>6</sup>
- The Botswana Power Corporation (BPC), the national utility, has a monopoly over large-scale power generation, imports, transmission, and distribution.<sup>6</sup>



Infrastructure

- Botswana relies heavily on fossil fuels for its electricity generation depending on two major coal-fired power plants (Morupule A and B) and a number of diesel plants.<sup>15</sup>
- Botswana imports power from the Southern Africa Power Pool (SAPP) mainly from South Africa.<sup>15</sup>
- Botswana's power system is facing key challenges like unreliable power supply, lack of investment, poor maintenance, and high service costs.<sup>15</sup>



Financing

- The Sustainable Energy Fund for Africa (SEFA), managed by the AfDB, has approved a \$1 Mn grant to facilitate Botswana's transition to clean energy.<sup>16</sup>
- The AfDB contributes to enhance the policy, regulatory and institutional environment and enables investment in RE generation through the Botswana Renewable Energy Support Project.<sup>6</sup>
- The World Bank partners with the Government of Botswana to promote private sector-led jobs-intensive growth besides strengthening human and physical assets and supporting effective resource management.<sup>17</sup>



Energy Imperatives

- As of 2022, coal fired generating stations dominate the total installed capacity with a share of 99% in the mix. Botswana is in the process of rebalancing the power mix by involving the private sector to develop RE generating capacities.<sup>6</sup>
- The total installed capacity of solar PV witnessed a CAGR of 15% between 2017-2021 reaching 5.94 MW in 2021 from 3.40 MW levels in 2017.<sup>18</sup>
- In 2020, the per capita electricity consumption of 0.871 MWh is significantly lower in comparison to the global average of 3.31 MWh.<sup>19</sup>
- The price of electricity in the country is 14.4 US Cents/kWh as of 2019.<sup>20</sup>