



# Nicaragua

Latin America & Caribbean

## Ease of doing Solar classification



**Achiever**

Electricity Consumption  
in kWh/capita (2020)

**703.4**

Average PVout in kWh/  
kWp/day (2020)

**4.1**

Cumulative Solar Capacity in MW  
(2021)

**16.4**

Getting Electricity Score (2020)

**68.3**

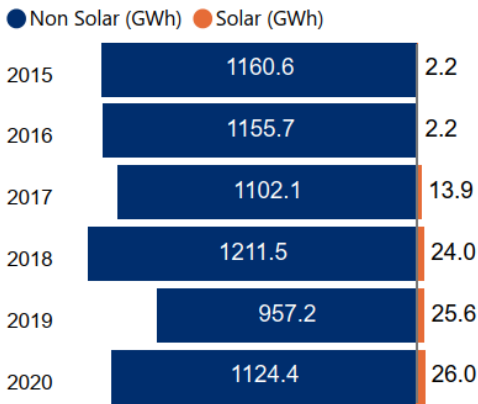
NDC Target by 2030 in %  
(base year 2018)

**25.0**

Human Development Index (2021)

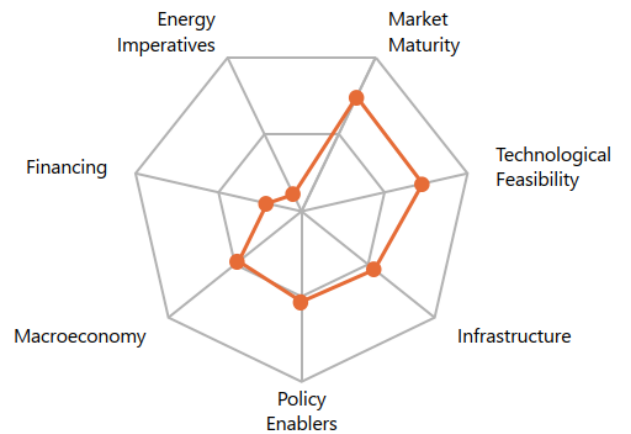
**0.7**

### Renewable Energy Generation by Source

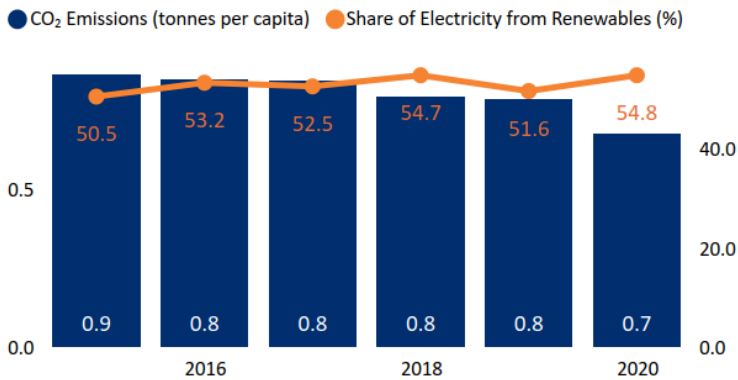


Non Solar RE includes Wind and Hydro;

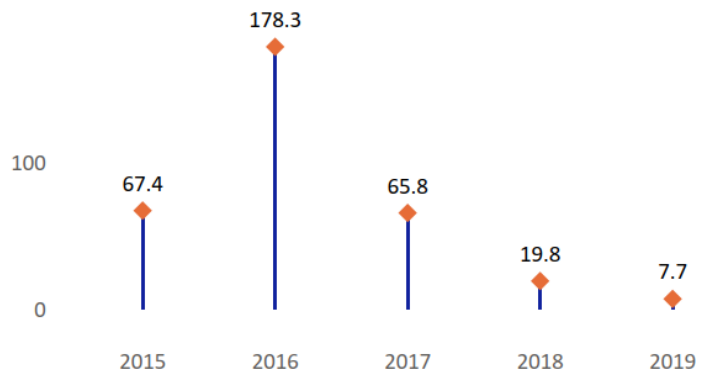
### Performance against 7 Drivers



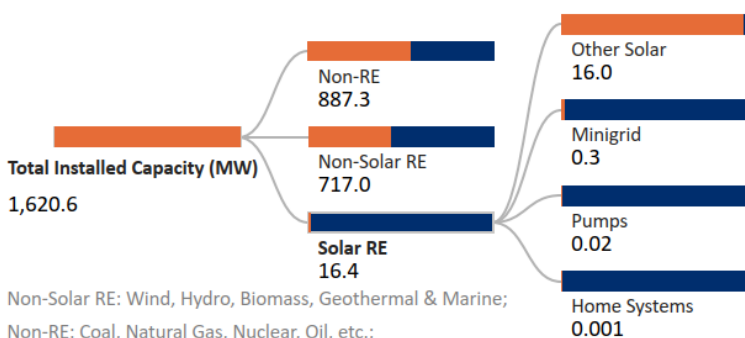
### CO<sub>2</sub> Emissions vs Electricity share from Renewables



### 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**

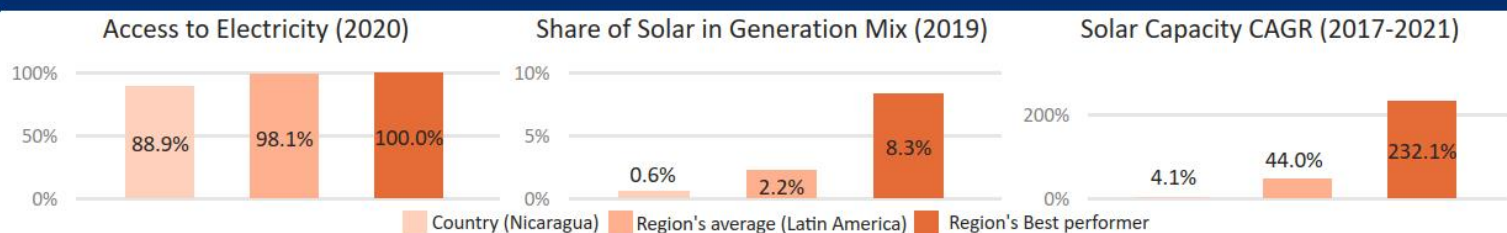
Renewable Energy Certificates?

**No**

Renewable Purchase Obligation?

**No**

## Country's regional performance and characteristics



### Areas of Strength

Market Maturity  
Technological Feasibility

### Areas of Improvement

Energy Imperatives  
Financing

## Key Insights

### Drivers

### Insights



Macro-economy

- Nicaragua is a lower-middle income country with a GDP per capita (PPP) of USD 6,195 in 2021.<sup>1,2</sup>
- Due to COVID-19 Pandemic, the GDP (Real) declined by 1.8% in 2020. However, in 2021, it has bounced back growing at a rate of 10.3%.<sup>3</sup>
- The inflation rate (CPI) of Nicaragua has increased to 4.9% in 2021 from 3.7% levels in 2020.<sup>4</sup>
- The general government gross debt to GDP has marginally increased to 49.4% in 2021 from 48.1% levels in 2020.<sup>5</sup>



Policy enablers

- Nicaragua has set a target to achieve 60% of RE share in its electricity generation mix by 2030.<sup>6</sup>
- The Ministry of Energy and Mines had developed an Indicative Electricity Generation Plan (2013-2027) to analyse power generation capacity from RE sources.<sup>7</sup>
- Nicaragua's National Sustainable Electrification and Renewable Energy Program (PNESER) has supported the government to promote efficient and sustainable electricity service.<sup>8</sup>



Technological Feasibility

- Nicaragua receives high levels of solar irradiation (GHI) of 5.04 kWh/m<sup>2</sup>/day and specific yield 4.1 kWh/kWp/day indicating a strong technical feasibility for solar in the country.<sup>9</sup>
- The Central American Bank for Economic Integration (CABEI) has signed a technical cooperation agreement with Nicaragua to carry out a study on adoption of Battery Energy Storage System Applications (BESS).<sup>10</sup>



Market Maturity

- 88.9% of the population in Nicaragua had access to electricity as of 2020.<sup>12</sup>
- Nicaragua's state owned Empresa Nicaraguense de Electricidad (ENEL) was unbundled in 1998-99 and private participation in generation and distribution business were allowed in the country.<sup>13</sup>
- Nicaragua has four generation companies (GEMOSA, GEOSA, HIDROGESA, GECSA), one transmission company (ENATREL) and two distribution companies (DISNORTE and DISSUR).<sup>13</sup>



Infrastructure

- Nicaragua transmission system comprises of lines operating at 230 kV, 138 kV and 69 kV, 24.9 kV and 13.8 kV.<sup>14</sup>
- The national transmission system is spread out with 2,404.87 kms of circuit and 91 sub-stations in operation.<sup>14</sup>



Financing

- In 2020, the Central American Bank for Economic Integration (CABEI) had approved a loan of USD 143 Mn to the Republic of Nicaragua to finance its National Program for Sustainable Electrification and Renewable Energy (PNESER).<sup>15</sup>
- In 2018, the Inter-American Development Bank had extended a loan of USD 20 Mn to finance RE projects managed by small and medium enterprises.<sup>16</sup>
- The Climate Investment Funds (CIF) has invested in Nicaragua through its Scaling up Renewable Energy Program (SREP) and Clean Technology Fund (CTF).<sup>17</sup>



Energy Imperatives

- In 2020, the per capita electricity consumption of 0.703 MWh in Nicaragua, which is lower in comparison to the global average of 3.31 MWh.<sup>18</sup>
- The total installed capacity of Solar PV witnessed a CAGR of 4.1% reaching 16.4 MW in 2021 from 14 MW levels in 2017.<sup>19</sup>
- The demand for electricity in the country stood at 5.09 TWh remaining similar in 2021 and 2020.<sup>20</sup>
- In 2021, the total installed capacity in the country stood at 1.9 GW with major share coming from other fossil fuel (43.99%) followed by other renewables (16.74%), wind (15.67%), hydro (12.23%), bioenergy (10.94%), solar (0.43%).<sup>20</sup>