



# Venezuela

Latin America & Caribbean

## Ease of doing Solar classification



### Influencer

Electricity Consumption in kWh/capita (2020)

# 3270.4

Average PVout in kWh/kWp/day (2020)

# 5.2

Cumulative Solar Capacity in MW (2021)

# 5.3

Getting Electricity Score (2020)

# 39.8

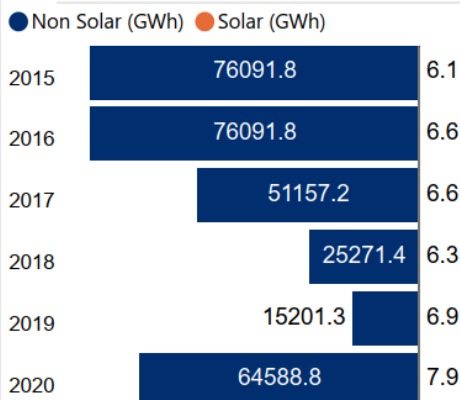
NDC Target by 2030 in %

# 20.0

Human Development Index (2021)

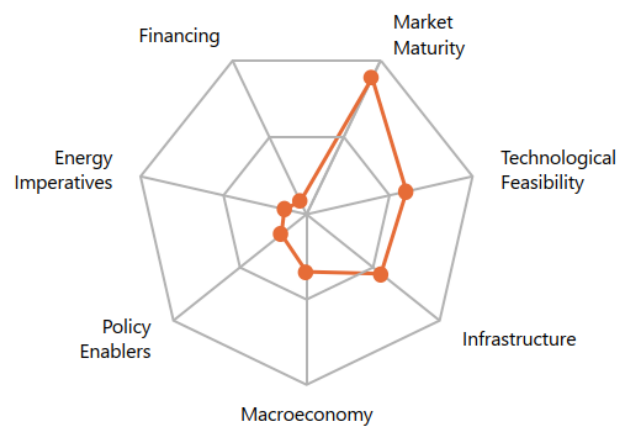
# 0.7

## Renewable Energy Generation by Source

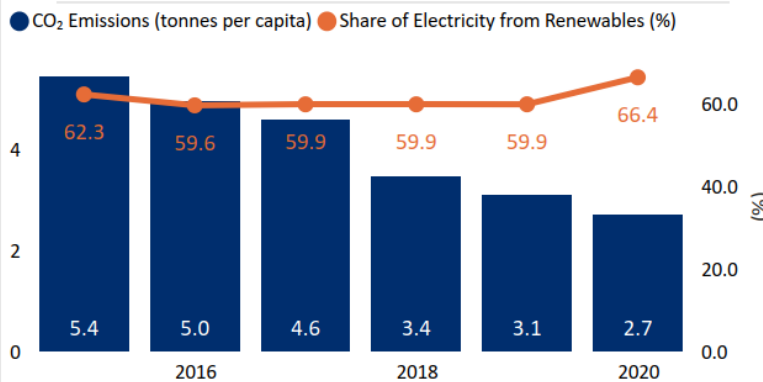


Non Solar RE includes Wind and Hydro;

## Performance against 7 Drivers



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

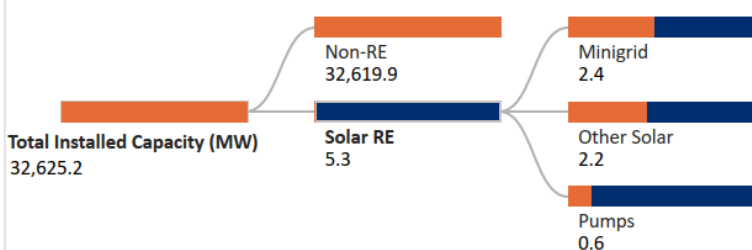


## Fiscal Incentives & Public Financing for Renewables (2020)

Investment or production tax credits?  
**No**

Public investment, loans, grants, capital subsidies or rebates?  
**No**

## 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**

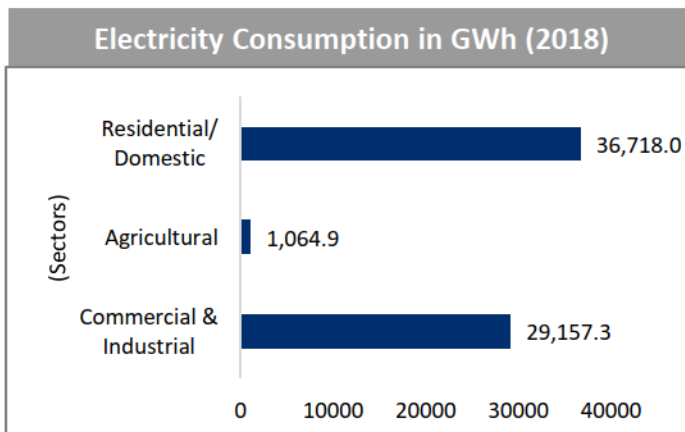
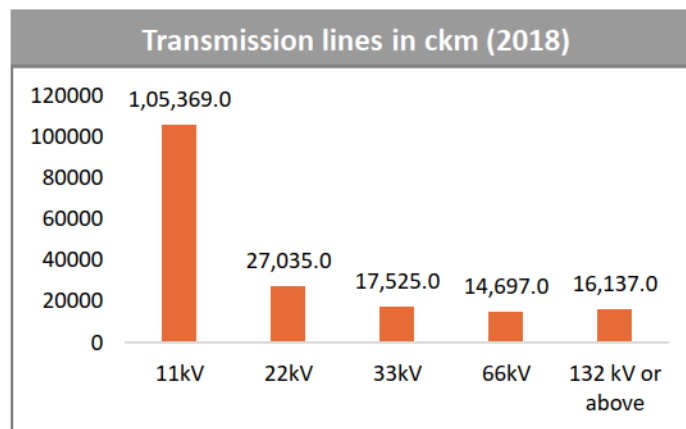
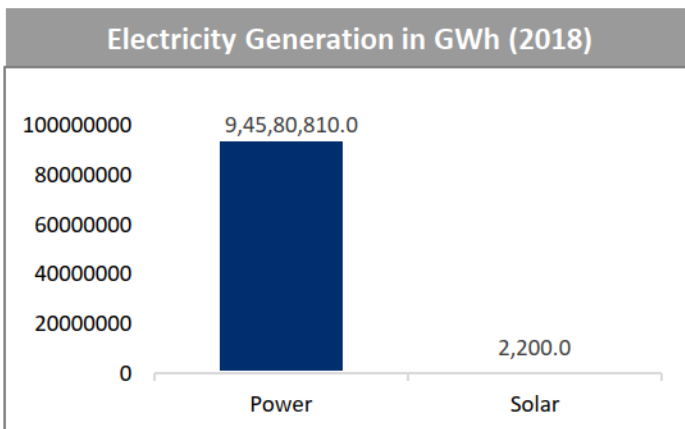
Renewable Energy Certificates?  
**No**

Renewable Purchase Obligation?  
**No**

Peak Demand/Load in GW (2018)
14.6

Electricity Consumption CAGR in % (2022 - 2026)
6.8

Diesel based Electricity Generation in GWh (2018)
78,92,130.0



**Financial Support Mechanisms (2022)**

Duty waivers to solar developers for importing/procuring material from foreign land	No
Tax waivers for manufacturers of raw materials (modules, off grid appliances, etc.)	No
Credit facilitation for solar energy from financial institutions (FIs)	Yes

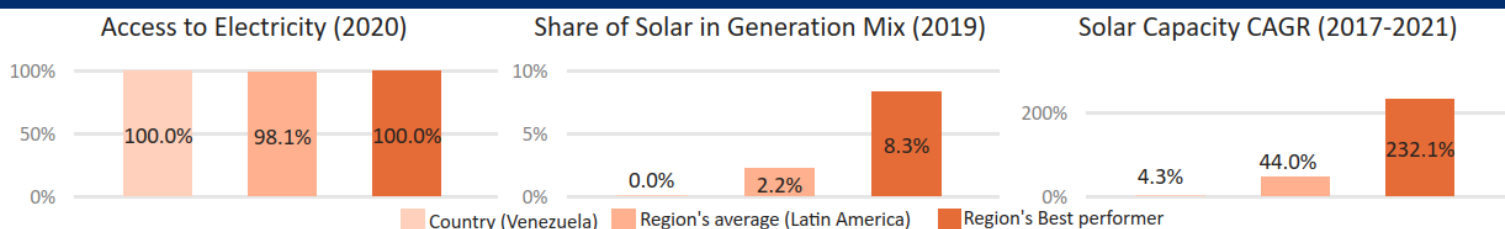
**Policies/Schemes for Solar Segments (2022)**

Rooftop Solar	Solar Mini Grids	Standalone solar systems	Utility scale solar	Solar Parks	Floating Solar	Solar heating and cooling system	Battery waste management	Green Hydrogen
Yes	Yes	Yes	Yes	Yes	No	No	No	No

**Emerging Technologies/Innovative Models (2021)**

Hybrid technologies - combination of two or more technologies to achieve efficient systems (Example: wind + solar PV hybrid systems, solar + storage systems)	Yes
Emerging technologies - the next generation technologies (Example: Artificial Intelligence, Machine learning, Internet of Things, etc.)	No
E-mobility/Electric vehicles	Yes

## 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

- Venezuela is a lower middle income country with a GDP per capita (PPP) of USD 1,690 (estimated) in 2020. <sup>1,2</sup>
- Due to COVID-19 Pandemic, the GDP (Real) declined by 30% in 2020. However, in 2021 it has bounced back growing at a rate of 0.5%. <sup>3</sup>
- The inflation rate (CPI) of Venezuela has decreased to 1590% in 2021 from 2360% levels in 2020. <sup>4</sup>
- The general government gross debt to GDP has decreased to 240.5% in 2021 from 319.1% levels in 2020. <sup>5</sup>



Policy enablers

- Venezuela Country Development Plans 2013-2019 ("Plan de la patria") had aimed at increasing energy efficient and RE technology in all sectors of economy. <sup>6</sup>
- Venezuela has set a target to generate 85% electricity from RE sources by 2030 under the UN 2030 Agenda for Sustainable Development. <sup>7</sup>
- Venezuela Development Plan for the National Electric System aims to integrate RE by including it in both the medium-term (2013-2019) and long-term (2014-2033) strategy. <sup>8</sup>



Technological Feasibility

- Venezuela receives high levels of solar irradiation (GHI) of 5.4 kWh/m<sup>2</sup>/day and specific yield 5.2 kWh/kWp/day indicating a high technical feasibility for solar in the country. <sup>9</sup>
- In 2021, Venezuela had commissioned its first grid connected solar pv system to ensure continuous power to broadband transport networks. <sup>10</sup>
- Venezuela has a rooftop solar installed capacity of 0.05 MW. <sup>22</sup>



Market Maturity

- 100% of the population in Venezuela had access to electricity as of 2020. <sup>12</sup>
- CORPOELEC is an integrated state-owned operating company responsible for carrying out activities of Generation, Transmission, Distribution and Marketing of power. <sup>13</sup>



Infrastructure

- In Aug 2022, the Government of Venezuela has announced to invest USD 1.5 Bn to rebuild the country's 9,000 MW generation system by 2025. <sup>14</sup>
- The IDB's 2020 report, A Look to the Future for Venezuela, estimates the cost of improvement of electricity sector for first five-year period at USD 7.1 Bn. These costs would include provision for activities aimed at improving generation, transmission, and distribution. <sup>15</sup>
- Venezuela's transmission network operates at 765 kV, 400 kV, 230 kV, 138 kV and 115 kV and 69 kV voltage levels. <sup>22</sup>



Financing

- Foreign investments are encouraged in Venezuela and are protected by a new legal framework enabled through the dispositions stipulated in the Decree 2095. <sup>16</sup>
- Venezuela have fully private model, community-based model and public-private mode for off-grid solar products. <sup>23</sup>



Energy Imperatives

- In 2020, the per capita electricity consumption stood at 3.27 MWh, which is slightly 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 4.3% reaching 5.3 MW in 2021 from 4.5 MW levels in 2017. <sup>19</sup>
- The peak demand for electricity in the country stood at 103.62 TWh remaining same in 2021 and 2020. <sup>20</sup>
- In 2021, the total installed capacity in the country stood at 33.31 GW <sup>21</sup> with maximum share coming from hydro (69.42%) followed by gas (30.49%), solar (0.01%). <sup>20</sup>