



# United Arab Emirates

Asia & Pacific

Ease of doing Solar classification



## Achiever

Electricity Consumption in kWh/capita (2020)

### 14047.4

Average PVout in kWh/kWp/day (2020)

### 5.0

Cumulative Solar Capacity in MW (2021)

### 2477.6

Getting Electricity Score (2020)

### 100.0

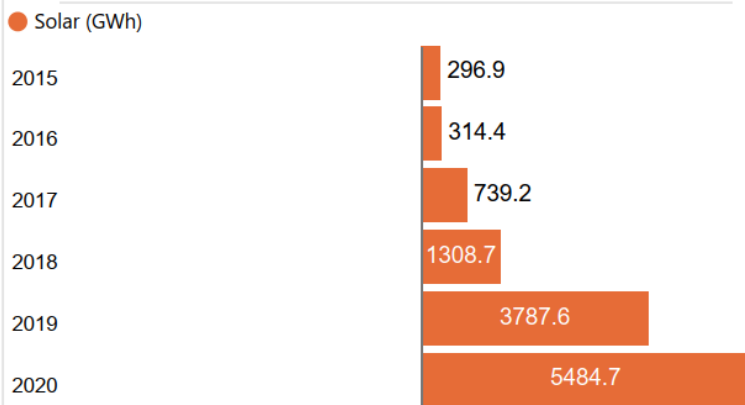
NDC Target by 2030 in % (base year 2016)

### 31.0

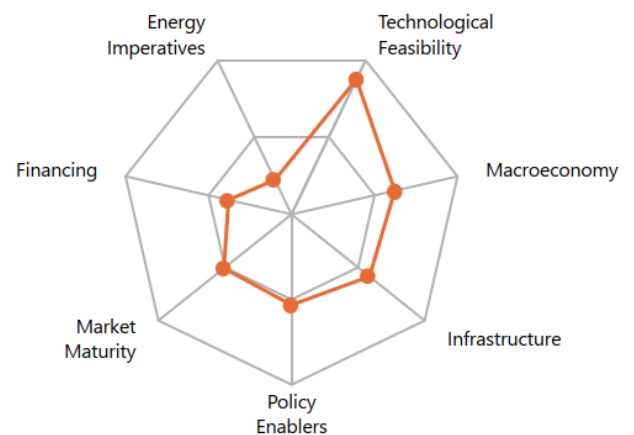
Human Development Index (2021)

### 0.9

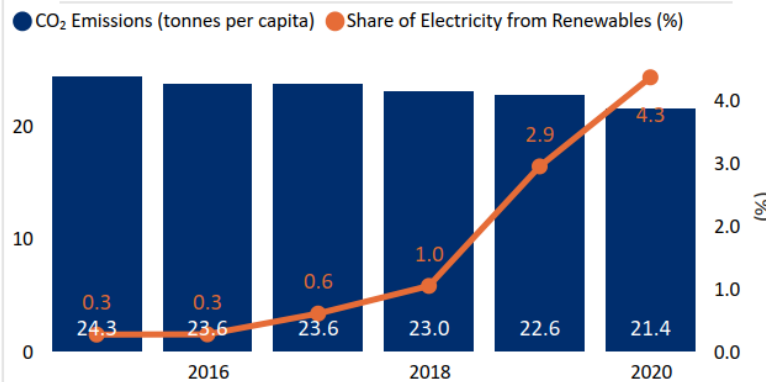
### Renewable Energy Generation by Source



### Performance against 7 Drivers



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

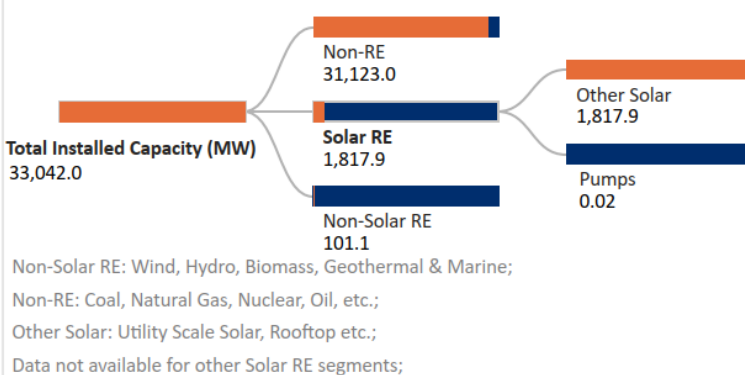


### Fiscal Incentives & Public Financing for Renewables (2020)

Investment or production tax credits?  
**No**

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

### Installed Capacity by Source (2019)



### Support for Renewables (2020)

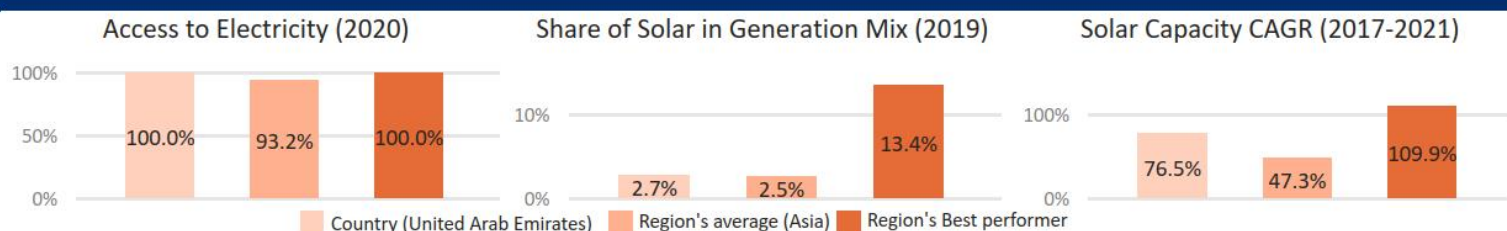
Feed-in-Tariffs for renewable energy supply to the grid?  
**No**

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

Renewable Energy Certificates?  
**No**

Renewable Purchase Obligation?  
**Yes**

## Country's regional performance and characteristics



### Areas of Strength

Macroeconomy  
Technological Feasibility

### Areas of Improvement

Energy Imperatives  
Financing

## Key Insights

### Drivers

### Insights



Macroeconomy

- UAE is a high-income country with a GDP per capita (PPP) of USD 76,609 in 2021.<sup>1</sup>
- Due to COVID-19 Pandemic, the GDP (Real) had declined by 6.1% in 2020. However, in 2021, the GDP has bounced back recording an annual growth rate of 2.3%.<sup>2</sup>
- The inflation rate (CPI) of UAE had increased by 0.2% in 2021 from -2.1% levels in 2020.<sup>3</sup>
- The general government gross debt to GDP has reached 38.3% in 2021 from 40.4% levels in 2020.<sup>4</sup>



Policy enablers

- The UAE Energy Strategy 2050 has set a target to have an energy mix of 44% clean energy, 12% coal, 6% nuclear.<sup>5</sup>
- The Ministry of Climate Change and Environment (MOCCA) have launched National Dialogue for Climate Ambition (NDCA) platform to have an inclusive participation in the UAE Net Zero by 2050 Strategic Initiative.<sup>8</sup>
- The Dubai Electricity and Water Authority (DEWA) under its Distributed Renewable Resources Generation Programme has come up with first smart initiative to connect solar energy to buildings.<sup>6</sup>



Technological Feasibility

- UAE receives very high levels of solar irradiation (GHI) of 6.05 kWh/m<sup>2</sup>/day and specific yield 5.0 kWh/kWp/day indicating a strong technical feasibility for solar in the country.<sup>10</sup>
- Shams-1 in Abu Dhabi was the World's largest Concentrated Solar Power (CSP) plant when launched in 2013 with an area covering 2.5 sq. km and has a production capacity of 100 MW.<sup>11</sup>
- Energy Service Companies (ESCOs) in Dubai are retrofitting 30,000 households with rooftop PVs.<sup>11</sup>



Market Maturity

- Ministry of Energy & Infrastructure is the regulator of the power sector in UAE.<sup>15</sup>
- Etihad Water and Electricity (EWE) is the dominant participant in the northern emirates and engages in all segments of the market including generation, transmission, and distribution.<sup>16</sup>
- Abu Dhabi Water Electricity Authority (ADWEA) operates through Abu Dhabi Water and Electricity Company (ADWEC), Abu Dhabi Transmission and Despatch Company (TRANSCO), Abu Dhabi Distribution Company (ADDC), Al Ain Distribution Company (AADC) and Al Mirfa Power Company (AMPC) for its generation, transmission and distribution (T&D) assets.<sup>17</sup>



Infrastructure

- UAE's TRANSCO is the largest grid owner with 68% share of UAE's line network, DEWA has a 26% share and SEWA accounts for 6% of the network.<sup>17</sup>
- Majority of the substations in UAE operates at 132 kV voltage level with DEWA accounting for over 70% of those substations. Only TRANSCO owns and operates substations at a voltage level of 220 kV.<sup>17</sup>
- TRANSCO has set a plan for 2020-2026 period to expand its transmission network across 132 kV, 220 kV and 400 kV.<sup>17</sup>
- DEWA is anticipating an investment of worth USD 0.27 Bn in electricity transmission projects between 2021 and 2024 of which 80% is for 132 kV projects and the rest is for 400 kV projects.<sup>18</sup>



Financing

- The Arab Petroleum Investments Corporation (APICORP), an investment agency for all energy related projects, has recently extended USD 50 Mn to Yellow Door Energy for financing solar projects.<sup>20</sup>
- The Abu Dhabi Fund for Development (ADFD) in association with IRENA is funding USD 400 Mn toward the Energy Transition Accelerator Financing (ETAFA) platform for securing a minimum of USD 1 Bn in total funding towards transition to RE in developing countries.<sup>21</sup>



Energy Imperatives

- In 2020, UAE's per capita electricity consumption stood at 14.04 MWh, which is more than four times higher in comparison to the global average of 3.31 MWh.<sup>23</sup>
- The peak demand for electricity in 2021 stood at 123.8 TWh remaining same as the previous year's demand.<sup>25</sup>
- In 2021, the total installed capacity in the country has reached over 27 GW<sup>11</sup> with a significant share coming from gas (95.54%) followed by solar (3.02%), nuclear (1.43%) and bioenergy (0.01%).<sup>25</sup>