



Greece

Europe and others

Ease of doing Solar classification



Achiever

Electricity Consumption
in kWh/capita (2020)

4485.5

Average PVout in kWh/
kWp/day (2020)

4.1

Cumulative Solar Capacity in MW
(2021)

3530.0

Getting Electricity Score (2020)

84.7

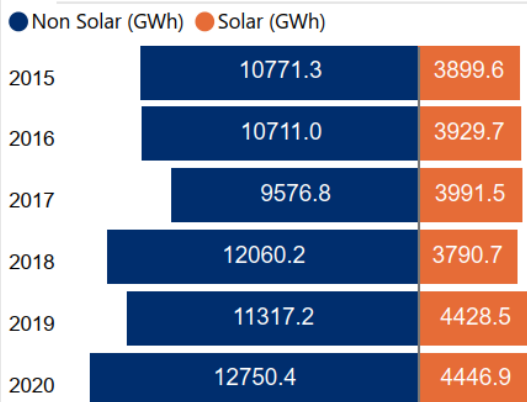
NDC Target by 2030 in %
(base year 1990)

55.0

Human Development Index (2021)

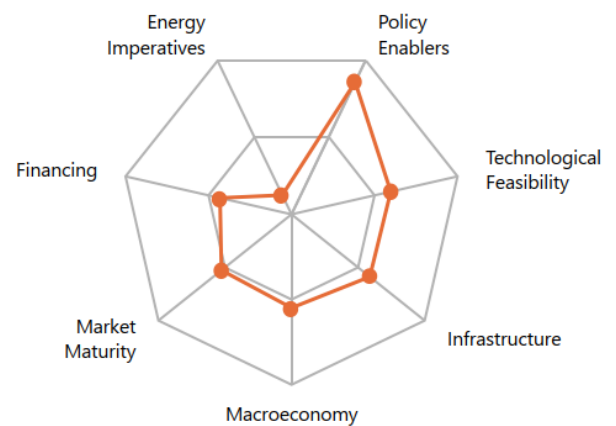
0.9

Renewable Energy Generation by Source

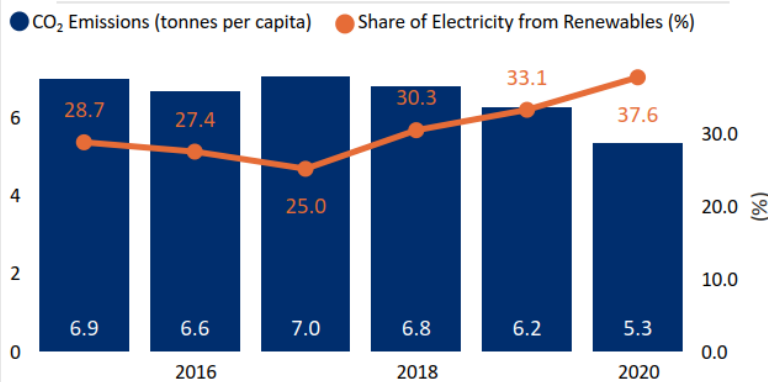


Non Solar RE includes Wind and Hydro;

Performance against 7 Drivers



CO₂ Emissions vs Electricity share from Renewables



Fiscal Incentives & Public Financing for Renewables (2020)

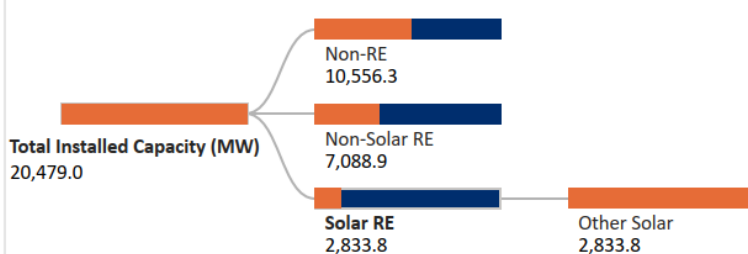
Investment or production tax credits?

Yes

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

Yes

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?

Yes

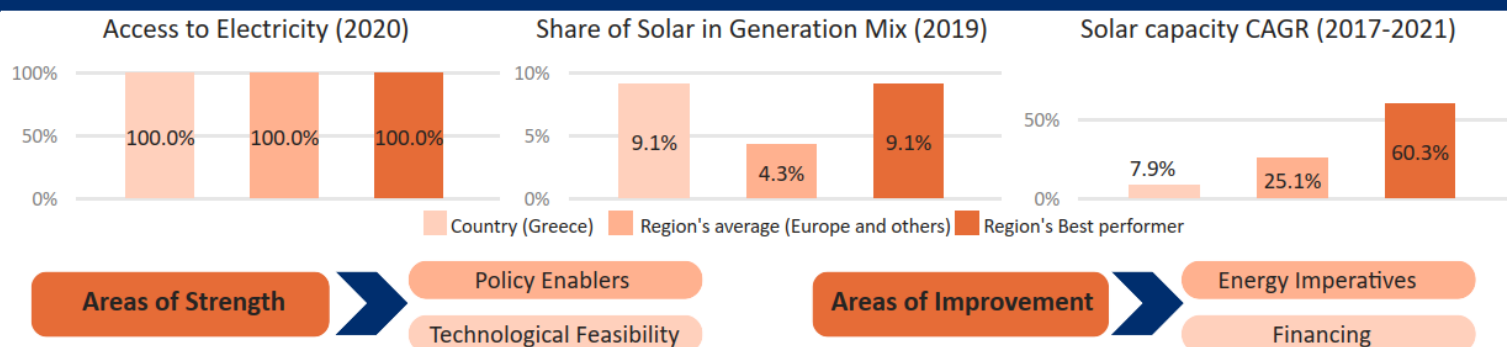
Renewable Energy Certificates?

Yes

Renewable Purchase Obligation?

Yes

Country's regional performance and characteristics



Key Insights

Drivers

Insights



Macro-economy

- Greece is a high-income country with a GDP per capita (PPP) of USD 31,486 in 2021.^{1,2}
- Due to COVID-19 Pandemic, the GDP (Real) had declined by 1.3% in 2020. However, in 2021 it has bounced back by growing at 8.3%.³
- The inflation rate (CPI) of Greece has increased to 0.6% in 2021 from -1.3% levels in 2020.⁴
- The general government gross debt to GDP has reduced to 199.4% in 2021 from 212.4% levels in 2020.⁵



Policy enablers

- Greece has targeted to accelerate its green energy capacity so as to increase the RE contribution in the generation mix to about 70% by 2030.⁷
- The country is promoting solar PV through many policy interventions such as feed-in-tariff and net metering policy for both solar and wind.⁸
- In Greece, the grid operators are mandated to connect RE generation plants to the grid and purchase electricity from such RE sources.⁸



Technological Feasibility

- Greece receives moderate solar irradiation (GHI) of 4.4 kWh/m²/day and specific yield 4.1 kWh/kWp/day indicating a moderate technical feasibility for solar in the country.⁹
- The European Commission has approved a package of USD 337.8 Mn for the commissioning of BESS facilities up to 900 MW.¹⁰
- Greece has installed a hybrid mini-grid comprising 462 kW of solar PV capacity with six racks of lithium-ion batteries, a capacity of 553.8 kWh of DC storage capacity.¹¹



Market Maturity

- 100% of the population in Greece had access to electricity as of 2020.¹²
- Regulatory Authority for Energy (RAE) is an independent body that oversees the energy markets in Greece.¹³
- Protergia is the Electricity and Natural Gas Unit of MYTILINEOS, the largest independent electricity producer company in Greece.¹⁵
- Hellenic Electricity Distribution Network Operator (HEDNO) oversees operation, maintenance, and development of the power distribution network in Greece.¹⁶



Infrastructure

- The total length of HEDNO's network stands at 241,569 kms as of 2021.¹⁷
- The transmission network consists of 400 kV, 150 kV, 20 kV along with 165,290 sub-stations.¹⁷
- Greece has cross country transmission network and has been exporting electricity to Albania, North Macedonia, Italy, Bulgaria.¹⁸



Financing

- European Investment Bank (EIB) has provided USD 4.9 Bn to support Greece in moving towards clean energy.¹⁹
- Greece Government and the private investors have aimed to invest USD 9.94 Bn towards clean energy transition.²⁰
- A grant of USD 1.36 Bn has been extended to Greece under Just Transition Phase of EU Cohesion Policy Fund for the period (2021-2027) for climate change mitigation and energy transition.²¹



Energy Imperatives

- In 2020, Greece's per capita electricity consumption stood at 4.48 MWh which is higher in comparison to the global average of 3.31 MWh.²²
- The total installed capacity of Solar PV witnessed a CAGR of 7.9% reaching 3,530 MW in 2021 from 2,605 MW levels in 2017.²³
- In 2021, the total installed capacity in the country stood at 21.14 GW with a significant share coming from gas (40.61%), coal (11.29%), hydro (9.91%), solar (8.89%), bioenergy (8.69%) followed by fossil fuel based (3.48%) and hydro (2.91%).^{24, 25}
- The cost of electricity per kWh is US Cent 18.5 for households and US Cent 11.6 for business.²⁶