



United Kingdom

Europe and others

Ease of doing Solar classification



Influencer

Electricity Consumption
in kWh/capita (2020)

4458.2

Average PVout in kWh/
kWp/day (2020)

2.6

Cumulative Solar Capacity in MW
(2021)

13799.0

Getting Electricity Score (2020)

96.9

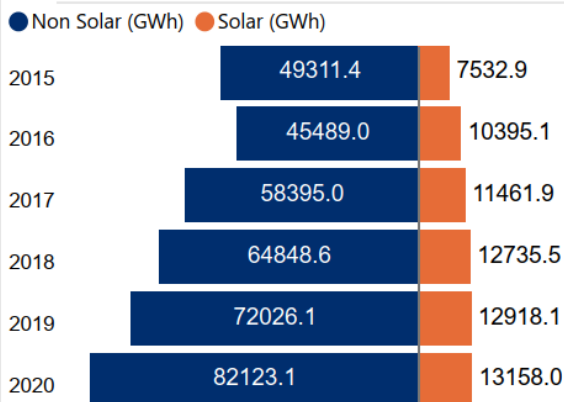
NDC Target by 2030 in %
(base year 1990)

68.0

Human Development Index (2021)

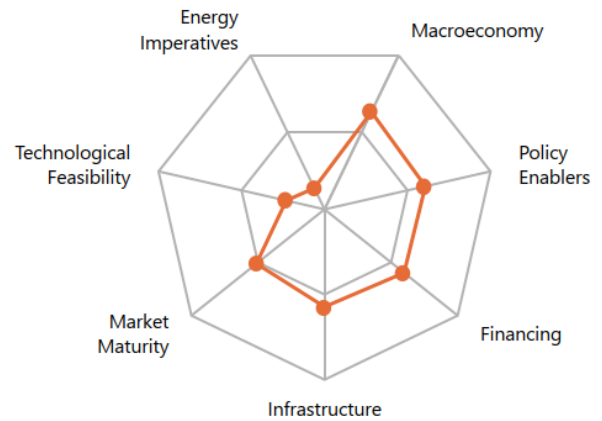
0.9

Renewable Energy Generation by Source

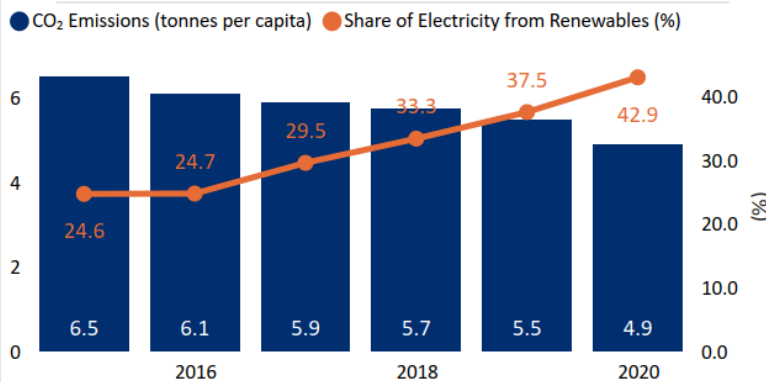


Non Solar RE includes Wind and Hydro;

Performance against 7 Drivers



CO₂ Emissions vs Electricity share from Renewables

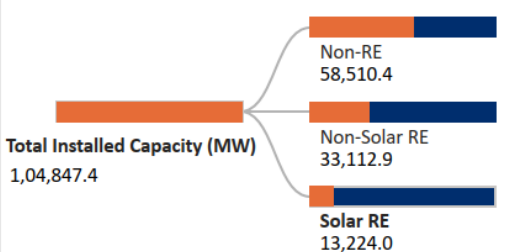


Fiscal Incentives & Public Financing for Renewables (2020)

Investment or production tax credits?
No

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)

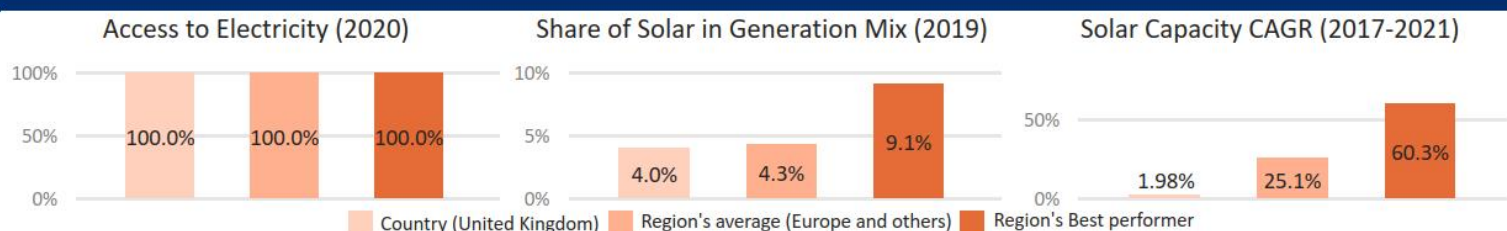
Feed-in-Tariffs for renewable energy supply to the grid?
Yes

Net metering/Gross metering policies and regulations?
No

Renewable Energy Certificates?
Yes

Renewable Purchase Obligation?
Yes

Country's regional performance and characteristics



Areas of Strength

Macroeconomy
Policy Enablers

Areas of Improvement

Energy Imperatives
Technological Feasibility

Key Insights

Drivers

Insights



Macroeconomy

- United Kingdom is a high-income country¹ with a GDP per capita (PPP) of USD 50,810 in 2021.²
- Due to COVID-19 Pandemic, the GDP (Real) had declined by 9.3% in 2020. However, in 2021 it has bounced back growing at a rate of 7.4%.³
- The inflation rate (CPI) of United Kingdom has increased to 2.6% in 2021 from 0.9% levels in 2020.⁴
- The general government gross debt to GDP has slightly reduced to 95.3% in 2021 from 102.6% levels in 2020.⁵



Policy enablers

- The Association for Renewable Energy & Clean Technology has extended support to United Kingdom (UK) in policy making for RE and associated clean technologies.⁶
- UK has set a target to cut its carbon emissions by around 68% by 2030 from 1990 levels.⁷
- UK has targeted to achieve offshore wind energy projects capacity to 50 GW by 2030.⁹
- UK has Feed-in Tariffs (FIT) policy to promote RE and low-carbon electricity generation.⁸



Technological Feasibility

- United Kingdom receives very low solar irradiation (GHI) of 2.6 kWh/m²/day and a specific yield 2.6 kWh/kWp/day indicating a week technical feasibility for solar in the country.¹⁰
- In November 2022, UK's NextEnergy Solar Fund has financed battery energy storage system (BESS) capacity of 250 MW/500 MWh in eastern England.¹¹
- Renewable UK figures from April show that the total pipeline of battery projects in the country has doubled from 16.1 GW a year ago to 32.1 GW at present.¹²



Market Maturity

- 100% of the population in United Kingdom had access to electricity as of 2020.²
- The Office of Gas and Electricity Markets (Ofgem) is the regulator of the UK gas and electricity networks and is governed by the Gas and Electricity Markets Authority.¹³
- Eastern Power Networks (EPN), London Power Networks (LPN) and Southeastern Power Networks (SPN) are the three licensed Distribution Network Operators (DNOs) regulated by Ofgem.¹³
- The European Power Exchange EPEX SPOT SE and its affiliates operate short-term electricity markets in Central Western Europe and the UK.¹⁴



Infrastructure

- UK's transmission network comprises of 7,000 kms of overhead lines, 2,800 kms of underground cable and 350 sub-stations.¹⁵
- UK's National Grid has two electricity transmission systems- Scottish Electricity Transmission System and English and Welsh Electricity Transmission System.¹⁵
- UK has set a target to reach 500 MW of rooftop solar capacity by 2022.¹⁶
- UK has cross border transmission lines with France, Interconnexion France-Angleterre (IFA) link.¹⁷



Financing

- The Asian Development Bank (ADB) and the Government of the United Kingdom has signed an MoU to develop a USD 134 Mn trust fund to support Association of Southeast Asian Nations (ASEAN) countries to scale up green financing.¹⁸
- In May 2022, British Oil and Gas Company (BP) has intended to invest up to USD 20.4 Bn in the UK's energy system by 2030.¹⁹



Energy Imperatives

- In 2020, the per capita electricity consumption stood at 4.46 MWh in United Kingdom, which is significantly higher in comparison to the global average of 3.31 MWh.²⁰
- The total installed capacity of Solar PV witnessed a CAGR of 1.98% reaching 13,799 MW in 2021 from 12,760 MW levels in 2017.²¹
- In 2021, the total installed capacity in the country stood at 108.07 GW with a major share coming from gas (40.23%) followed by nuclear (15.26%), wind (21.17%), bioenergy (12.73%), solar (4.06%), Coal (1.93%).^{23,22}
- The cost of electricity per kWh is US Cent 32.2 for households and US Cent 25.1 for business.²⁴