
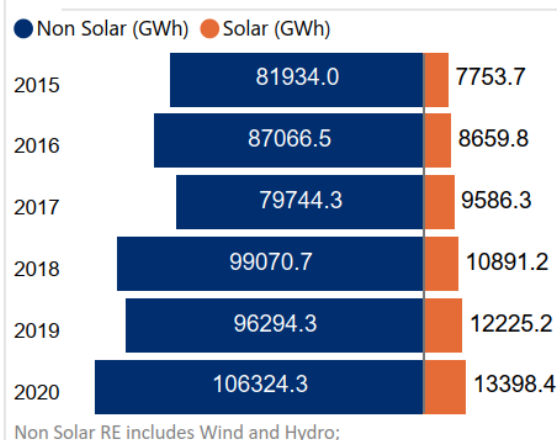
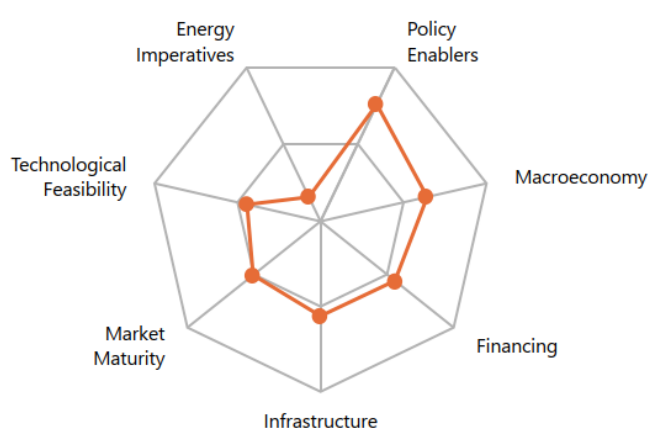
		France Europe and others	Ease of doing Solar classification  Achiever
Electricity Consumption in kWh/capita (2020) 8091.8	Average PVout in kWh/kWp/day (2020) 3.4	Cumulative Solar Capacity in MW (2021) 14709.2	
Getting Electricity Score (2020) 92.0	NDC Target by 2030 in % (base year 1990) 55.0	Human Development Index (2021) 0.9	

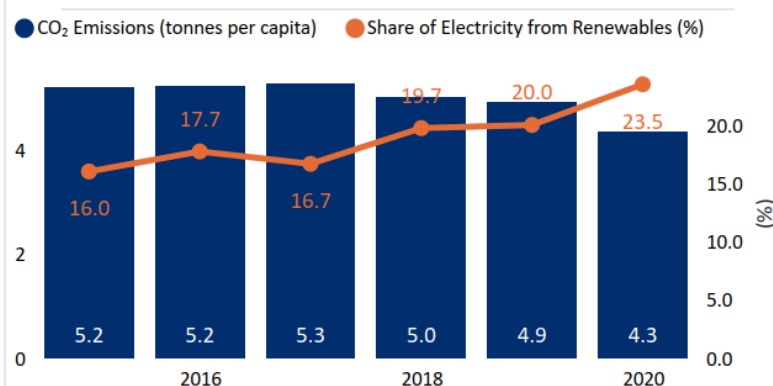
Renewable Energy Generation by sSource



Performance against 7 Drivers



CO₂ Emissions vs Electricity share from Renewables

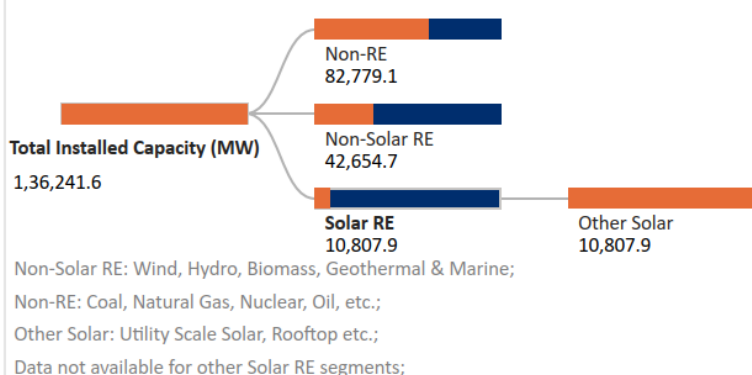


Fiscal Incentives & Public Financing for Renewables (2020)

Investment or production tax credits?
Yes

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

Installed Capacity by Source (2019)



Support for Renewables (2020)

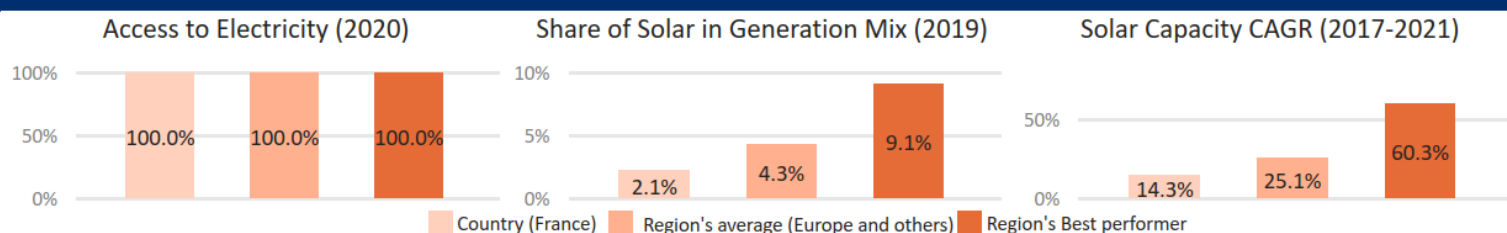
Feed-in-Tariffs for renewable energy supply to the grid?
Yes

Net metering/Gross metering policies and regulations?
No

Renewable Energy Certificates?
Yes

Renewable Purchase Obligation?
No

Country's regional performance and characteristics



Areas of Strength

Macroeconomy

Policy Enablers

Areas of Improvement

Energy Imperatives

Technological Feasibility

Key Insights

Drivers

Insights



Macroeconomy

- France is a high-income country with a GDP per capita (PPP) of USD 50,996 in 2021.^{1, 2}
- Due to COVID-19 Pandemic, the GDP (Real) had declined by 7.9% in 2020. However, in 2021, the GDP has bounced back recording an annual growth rate of 6.8% which is one of the fastest recoveries among similar economies in the world.³
- The inflation rate (CPI) of France has increased by 2.1% in 2021 from 0.5% levels in 2020.⁴
- The general government gross debt to GDP has slightly reduced to 112.6% in 2021 from 114.7% levels in 2020.⁵



Policy enablers

- France as an EU member has targeted to achieve a GHG emission reduction of at least 40% across the different sectors of the economy by 2030.⁹
- France has planned to reduce the share of nuclear from 70% to 50% in its electricity mix by 2035.⁶
- France legislated a net zero emissions target for 2050 in its 2019 Energy and Climate Act.⁶
- France has a feed-in-tariff policy, which gets updated by the France regulator Commission de Régulation de l'Énergie (CRE) depending upon the market.⁷
- France's energy regulator has released tenders in 2021 for the development of solar and other renewable energy projects.⁸



Technological Feasibility

- France receives moderate solar irradiation (GHI) of 3.5 kWh/m²/day and specific yield 3.4 kWh/kWp/day indicating a moderate technical feasibility for solar in the country.¹⁰
- In 2021, France has come up with 55 MW solar power plant located northeast of Gien (Loiret), which would be catering to the electricity demand of close to 38,000 customers.¹¹
- Total Energies in France has installed a power capacity of 61 MW with a storage capacity of 61 MWh in 2021.¹²
- France's Enedis, a power grid operator in France, has achieved rank one in Smart Grid Index 2021.¹³



Market Maturity

- 100% of the population in France had access to electricity as of 2020.¹⁴
- The Commission de régulation de l'énergie is a regulatory body that regulates the electricity markets in France.¹⁵
- France's Enedis manages 95% of the electricity distribution network which is around 1.4 Mn Kms of power line.¹⁶
- Réseau de Transport d'Électricité (RTE) is the electricity transmission system agency operating in the country.¹⁸



Infrastructure

- The electricity transmission system comprises voltage levels ranging from 440 kV, 220 kV and low voltage of 63 and 90 kV covering almost 100,000 kms.^{17, 18}
- France's transmission system is interconnected with Belgium, Germany, Italy, Spain, Switzerland and Great Britain.¹⁹
- Réseau de Transport d'Électricité (RTE) is developing its offshore transmission network to generate 10-15 GW offshore wind power under a new scheme "schéma décennal de développement du réseau" (SDDR) by 2035.²⁰



Financing

- Under the SDDR scheme, RTE has approximately invested USD 1.27 Bn towards development of transmission system.²⁰
- European Commission has approved USD 6.7 Bn support for renewable power generation from rooftop solar in France.²¹
- France has become one of the key contributors to Green Climate Fund (GCF) with a contribution of USD 1.7 Bn.²²



Energy Imperatives

- In 2020, France's per capita electricity consumption stood at 8.09 MWh which is significantly higher in comparison to the global average of 3.31 MWh.²³
- The total installed capacity of Solar PV witnessed a CAGR of 14.3% between 2017-2021 reaching 14,709 MW from 8610 MW between the years.²⁴
- In 2021, the total installed capacity in the country reached 139.07 GW²⁵ with a significant share coming from nuclear (72.17%) followed by hydro (10.84%), gas (6.95%), wind (6.68%), solar (2.67%), bioenergy (1.65%), other fossil (1.81%), coal (0.59%).²⁶
- The Cost of electricity per kWh is US Cent 18.2 for households and US Cent 17.0 for business.²⁷