The EU has committed to an EU-wide energy transition from fossil fuels to clean energy sources.

The EU’s 2020 climate and energy target framework include an EU-wide target to achieve a 20% share of renewable energy in gross final energy consumption by 2020.

The EU’s new 2030 climate and energy framework raises ambition to 32% by 2030.

The EU Long Term Strategy for achieving climate neutrality by mid-century foresees a significant role for renewables by 2050 across all of its scenarios.

The incoming European Commission is committed to greenhouse gas neutrality by 2050 and to increasing the EU’s 2030 greenhouse gas reduction target to -50%, possibly -55%.

Strategies for a cost-efficient transformation of the energy sectors by 2030

1. Efficiency: reduce overall energy consumption by a further 17%
2. Renewables: renewables grow two-thirds to supply 32% of final energy demand and 57% of electricity demand
3. Decarbonization: cut coal by two thirds, reduce oil & gas by a quarter

Own calculations based on COM modelling for the Clean Energy Package and EU Long Term Strategy, and taking into account the coal phase outs announced by member states.
Cost-efficiently meeting the current renewables target and accelerating towards 2030 both means significantly increasing the rate of wind and solar deployment compared to 2010-2018.

Net electricity generation from wind and solar (in TWh) from 2010-2018 and in select Commission scenarios

Agora Energiewende & Sandbag (2019); European Commission (2018); European Commission (2019)
With growing shares of wind and solar PV, power systems need to become more flexible on the supply and on the demand side

Analysis for CWE region shows that in a 50% RES-e system, the need for baseload capacities halves. The need for peak capacities does not.

If mix remains unchanged during transition all power plants have lower utilisation rates compared to more flexible capacity mix.

40% less investment required if capacity mix is transformed towards greater flexibility and all market participants are better off.

System adequacy ensured at lower cost with a power mix characterized by technical flexibility.

Strengthening the market mechanism and enhancing power system flexibility is a major focus of the Clean Energy for all Europeans package.

Fraunhofer IWES (2015) *Modelling based on 2011 weather and load data
Ensuring system adequacy is an important concern. However, system adequacy safeguards must be consistent with long-term decarbonisation targets and flexibility requirements.

<table>
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<th>Capacity mechanisms in Europe – 2017</th>
<th>Provisions on capacity mechanisms in the new Electricity Market Regulation</th>
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<td>No CM (energy only market)</td>
<td>- European and national adequacy assessment to be comparable</td>
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<td>CM proposed/under consideration</td>
<td>- Capacity mechanism as a last resort, giving priority to energy market reforms</td>
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<td>CM operational</td>
<td>- Strategic reserve as first choice</td>
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<td>- Capacity mechanisms to be temporary (10 yr approval)</td>
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<td></td>
<td>- 550 gCO2/kWh emission performance standard (applicable for existing generation as of 2025)</td>
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<td>- Direct cross-border participation (except strategic reserves)</td>
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</table>

ACER (2018)
State Aid approval of national capacity mechanisms becomes a critical element in coal-to-clean transitions

Key issues in Commission State Aid decisions on capacity mechanisms:

→ Is there really a need?
→ Strong reliance on information and data provided by the notifying Member State
→ Duration of approval decisions
→ Duration of capacity contracts
→ Concerns to reduce greenhouse gas emissions treated as secondary to market concerns. Little push to develop low-/zero-carbon options that could deliver the same reliability result.
→ Limited transparency