OFFSHORE RENEWABLE ENERGY

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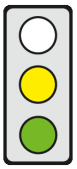
KEY ISSUES

Context: The EU wants to reduce greenhouse gas emissions to net zero ("climate neutrality") by 2050. The development of offshore energy, such as wind, wave and tidal energy, is to make a greater contribution to this.

Objective of the Communication: The Commission sets out possible measures aimed at making offshore renewable energy a core component of Europe's energy system by 2050.

Affected parties: Energy producers, transmission system operators, investors.



Pro: (1) Cross-border cooperation facilitates synergies and a more efficient use of maritime space.

(2) The Commission is rightly pursuing the aim of integrating offshore energy into the competitive market and exposing it to market risks.

Contra: Specific deployment targets for certain offshore renewable energies will result in the unnecessary and expensive relocation of emissions within the EU as energy production is already regulated by the EU Emissions Trading System, EU ETS. The proposed measures may, however, counteract such price increases.

The most important passages in the text are indicated by a line in the margin.

CONTENT

Title

Communication COM(2020) 741 of 19 November 2020:
An **EU Strategy to harness** the potential of **offshore renewable energy** for a climate neutral future

Brief Summary

- **Context and objectives**
  - In order to reduce greenhouse gases such as CO_2, the EU wants to increase the level of renewable energy (renewables) as a proportion of the EU's total energy consumption to at least 32% by 2030 [Renewable Energy Directive (EU) No. 2018/2001, Art. 3 (1); see cep**Input** 01/2019].
  - Offshore renewable energy (offshore renewables) covers various energy production technologies that are currently in varying stages of development [p. 3 et seq.].
    - Bottom-fixed off-shore wind turbines attached to the sea floor (already installed capacity: 12 GW) are the only offshore renewable technology that is market-ready.
    - Floating offshore wind energy plants (40 MW) are in the technology and market development phase.
    - Ocean energy technologies such as wave (8 MW) and tidal (5 MW), which produce energy more constantly than other renewables, are in the technology and market development phase.
    - Floating photovoltaic plants (17 KW) and the production of biofuels from seaweed – such as biodiesel, biogas and bioethanol – are still in the early stages of research and development.
  - The Commission sets out possible measures aimed at turning offshore renewables into "a core component of Europe's energy system" by 2050 [p. 2]. For this purpose, it is planning to scale up installed capacity [p. 1 et seq.]
    - of offshore wind energy to 60 GW, and ocean energy to 1 GW, by 2030;
    - of offshore wind energy to 300 GW, and ocean energy to 40 GW, by 2050.

- **Identifying installation sites**
  - As part of "maritime spatial planning" in their coastal waters [Directive 2014/89/EU, Art. 3], Member States will identify "a much larger number of sites" for offshore renewable power installations and scale up connections to the power transmission grid [p. 7 et seq.].
  - All coastal Member States must submit "national maritime spatial plans" to the Commission by no later than 31 March 2021 [Directive 2014/89/EU, Art. 4, 11, 12 and 15; p. 8 et seq.]. These will
    - indicate development objectives for offshore renewables to help both authorities and business and investors "to plan ahead", and
    - prevent conflicts "at a very early stage in the planning process" between offshore renewables projects and
      - other maritime activities such as fishing, shipping and military activities,
      - legislation to protect the environment [e.g. Strategic Environmental Assessment Directive 2001/42/EC; Habitats Directive 92/43/EEC; Birds Directive 2009/147/EC; Marine Strategy Framework Directive 2008/56/EC; EU Biodiversity Strategy 2030 COM(2020) 380; see cep**PolicyBrief**] and

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- the interests of other Member States and third countries.

– The Commission wants to [p. 9 et seq.]
  - support cooperation between Member States in "regional sea basins" (e.g. North Sea, Baltic Sea, Mediterranean) in order to identify the "best sites" for cost-efficient offshore renewables projects and avoid conflicts with other maritime activities and with environmental protection;
  - work together with Member States and international organisations to protect sea basins – e.g. under the OPSPAR Convention for the North Sea, the HELCOM Convention for the Baltic and the Barcelona Convention for the Mediterranean – and develop concepts and pilot projects for the cross-border development of offshore renewables.

► **Development of electricity grids**

– To achieve a "significant" scale-up of offshore renewables, the required development of power grids in a sea basin must go "beyond national borders" in the long term [p. 12].
  - First, the relevant Member States should together set obligatory "ambitious targets" for the development of offshore renewables for each sea basin – e.g. by way of an intergovernmental agreement [p. 12].
  - Next, these development targets would be taken into account in "integrated regional grid planning and development" [p. 13].

– In order to strengthen cross-border cooperation between the Member States, transmission system operators (TSOs) and national regulatory authorities in a sea basin [p. 13],
  - "regional coordination centres", responsible for cross-border coordination of grid management in the internal electricity market [Internal Electricity Market Regulation (EU) 2019/943, Art. 35; see cep**Input** 04/2019, p. 5 et seq.], will be given "a stronger role" in the medium term, and
  - in the long term, regional offshore network operators will be created.

– The Commission criticises the fact that [p. 11 et seq.]
  - most existing offshore wind farms are connected directly ("radially") to the onshore transmission grid of only one Member State in order to transport offshore renewable electricity to consumers, and
  - at the same time, separate interconnectors are built between national onshore transmission grids to facilitate cross-border electricity trading within the internal electricity market and to ensure security of supply.

– In order to reduce costs and the demands on maritime space for the construction of separate electricity grids, which may lead to conflicts with other maritime activities and with environmental protection [p. 11 et seq.],
  - offshore wind-parks will, in the medium term, be connected to cross-border interconnectors in order to integrate them into a national onshore transmission grid ("hybrid offshore renewables projects");
  - a cross-border "fully meshed offshore grid" will be established, in the long term, in which electricity – as with onshore electricity grids – "can flow in many directions".

► **Integration into the electricity market**

The Commission criticises the fact that the design of the electricity market is not set up for the integration of hybrid offshore renewables projects: Currently, electricity prices are established by way of supply and demand in onshore bidding zones and corresponding price zones in the Member States ("bidding zones") [Internal Electricity Market Regulation (EU) 2019/943; see cep**Input** 04/2019], whereas hybrid offshore renewables projects are connected via cross-border interconnectors to several national biding zones [p. 14 et seq.].

– Due to the lack of capacity of cross-border interconnectors between national onshore transmission grids and their onshore bidding zones, there may be a greater need for TSOs to regulate the fluctuating electricity production of hybrid offshore renewables projects. The operators of offshore renewables projects will thus incur losses in revenue.

– The Commission wants to [p. 15]
  - give hybrid offshore renewables projects their own offshore bidding zone;
  - permit Member States to address the resulting "redistribution effects" which are detrimental to operators of hybrid offshore renewables projects due to low electricity market prices, and favourable to TSOs due to the proportionately higher congestion revenue;
  - develop a "revenue stabilisation system" (de-risking, guarantees and power purchase agreements) to support mature offshore renewable energy technologies.

► **Investment**

– Of the estimated € 800 billion in investment needed for offshore renewables by 2050 [p. 17],
  - one third will go to offshore renewable energy production and
  - two thirds to the deployment of grid infrastructure.

– Public funding from the EU and Member States will provide incentives for private investment in offshore renewables [p. 17].

– The EU investment programme InvestEU will mobilise private investment [p. 17].

– The "EU renewable energy financing mechanism" [Governance Regulation (EU) 2018/1999, Art. 33; see cep**Input** 02/2019, p. 10] will provide incentives for supporting cross-border offshore renewables projects to both coastal and landlocked Member States by ensuring that, by making contributions, a Member State [p. 18]
- supports the generation of a certain amount of offshore renewables in a coastal Member State and
- can set this amount off against its national renewables development target as a "statistical benefit".

Policy Context

In 2018, in its Communication "A cleaner planet for all" [COM(2018) 773], the Commission called for the scaling up of offshore renewables. This Strategy forms part of the "European Green Deal" [COM(2019) 640; see cep**Adhoc**], under which greenhouse gas emissions in the EU are to fall by 55% by 2030 as compared with 1990 levels, and to net zero by 2050 ["climate neutrality"; Commission Proposal COM(2020) 80; see cep**PolicyBrief** 03/2020].

Options for Influencing the Political Process

Directorates General:	DG Employment and Social Affairs (leading)
Committees of the European Parliament:	Industry, Research and Energy, Rapporteur: N.N.
Federal Ministries:	Economic Affairs and Energy (leading)
Committees of the German Bundestag:	Economic Affairs and Energy (leading)

ASSESSMENT

Economic Impact Assessment

The deployment objectives envisaged by the Commission for specific offshore energies (offshore renewables) should be rejected as a dirigiste presumption of knowledge. Generally, the proportion of renewable energy in the energy supply should not be determined politically but by way of competition and at the lowest possible cost. The EU Emissions Trading System [EU ETS; see cep**Input** 03/2018] already provides adequate incentives for the efficient deployment of renewable energy including offshore renewables. Additional **specific deployment targets,** which under the Renewable Energy Directive [(EU) No. 2018/2001; see cep**Input** 01/2019] are basically promoted by way of subsidies, **lead** not to additional emissions reduction but **only to the unnecessary and expensive relocation of emissions within the EU as energy production is already regulated by the EU Emissions Trading System, the EU ETS**, under which the overall quantity of emissions allowances, and therefore also that of CO_2 emissions, is limited. Moreover, since the potential for more cost-effective CO_2 reduction options in the EU ETS is thus not fully realised, it will simply lead to unnecessary cost increases. This makes it all the more necessary, as the Commission is now planning, to remove regulatory barriers to securing the development of offshore renewables by way of market forces and cross-border cooperation. **The measures now being proposed may, however, counteract such cost increases.**

A multi-use approach to sea basins will facilitate the deployment of offshore renewables in the limited maritime space available. By way of long-term maritime spatial planning, Member States can ensure that conflicts between offshore renewables projects and other maritime activities, environmental legislation and the interests of other countries, are recognised and tackled at a very early stage in the planning process. At the same time, **maritime spatial plans should identify sufficient areas to enable** the large-scale **deployment of offshore renewables** and rapid construction operations. Otherwise, the available potential of offshore renewables will not be realised. **Cross-border cooperation** between Member States in regional sea basins **facilitates** the identification of the best sites for offshore renewables projects, the creation of **synergies and an overall more efficient use of maritime space.**

The development of cross-border grid infrastructure is essential for realising the deployment of offshore renewables. This means that production and consumption of offshore renewables, the supply of which fluctuates significantly due to weather conditions, can be more effectively aligned in terms of location and time. Regional cooperation between the transmission system operators (TSOs) is also necessary for a functioning internal electricity market and optimum utilisation of transmission system network capacity. It is therefore appropriate for regional coordination centres, that are dependent on national TSOs, to assume network regulatory functions that have cross-border application. TSOs should, however, retain sole responsibility for ensuring a secure, reliable and efficient electricity system in the relevant Member State. In order to ensure a high level of grid stability and security of supply, areas of responsibility must be clearly defined and any unnecessary duplication of structures avoided.

Cross-border hybrid offshore renewables projects – that are connected to at least two Member States – **may support both the scaling up of offshore renewables capacity and the cross-border trade in electricity within the EU.** However, current EU rules on the internal electricity market are not set up for an electricity supply from hybrid offshore renewables projects and are hindering their development. **The Commission's plans** – e.g. for setting up offshore bidding zones – **are rightly pursuing the aim of integrating offshore renewables into the competitive market and exposing them to market risks** by removing regulatory barriers as fast as possible. The removal of EU regulatory barriers to the electricity market may support the scaling up of offshore renewables projects, but, at the same time,

integration into the competitive market also harbours risks for operators of hybrid offshore renewables projects. These risks may be reduced by the planned correction of the "redistribution effect" that is currently a burden on operators of hybrid offshore renewables projects, thereby preventing the latter from being permanently dependent on state aid. This must, however, be implemented without delay as otherwise offshore wind parks that are connected to the onshore transmission grid of only one Member State, will continue to be the preferred option. The subsequent deployment of additional interconnectors would cause unnecessary additional costs and avoidable conflict with other maritime activities as well as with environmental protection.
The option to allow landlocked Member States to participate in the financing of offshore renewables means that offshore renewables will be rolled out in locations where the geographical and climatic conditions make it the most cost-effective.

Legal Assessment

Legislative Competency

The EU can take measures to support renewable energy [Art. 194 (1) (c) TFEU].

Subsidiarity.

Unproblematic. Measures supporting cross-border cooperation between Member States and other actors such as transmission system operators are best taken at EU level.

Conclusion

Specific deployment targets lead only to the unnecessary and expensive relocation of emissions within the EU as energy production is already regulated by the EU Emissions Trading System, the EU ETS. The measures now being proposed may, however, counteract such cost increases. Maritime spatial plans should identify sufficient areas to enable the large-scale deployment of offshore renewables. Cross-border may facilitate synergies and an overall more efficient use of maritime space. Cross-border hybrid offshore renewables projects may support both the scaling up of offshore renewables capacity and the cross-border trade in electricity within the EU. The Commission's plans are rightly pursuing the aim of integrating offshore renewables into the competitive market and exposing them to market risks.