EXPLANATORY MEMORANDUM FOR EUROPEAN UNION DOCUMENTS

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COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS An EU Strategy to harness the potential of offshore renewable energy for a climate neutral future

Submitted by the Department for Business, Energy and Industrial Strategy on 4 December 2020

SUBJECT MATTER

1. On the 19 November 2020 the Commission published a communication setting out an EU Strategy to harness the potential of offshore renewable energy for a climate neutral future.

2. The European Green Deal Communication[1], published 11 December 2019, called for a scaling up of offshore wind energy. As part of this new offshore renewables strategy published on the 19 November 2020, the Commission has set an objective of increasing installed capacity from 12 gigawatts (GW) currently to 60GW of offshore wind by 2030 and that to reach 300GW by 2050.

3. The strategy is a long-term framework for businesses and investors to address barriers and challenges common to all offshore technologies and sea basins. It sets out specific policy solutions adapted to the differing states of development of technology and different regional contexts.

4. The Commission points out that this strategy comes in the context of the NextGenerationEU recovery fund, which will provide an opportunity to leverage public capital to offset potential private offshore investment slow-down due to the COVID-19 crisis.

5. To note, the italicised subheadings below follow the section headings in the strategy.

Outlook for offshore renewable energy technologies

6. According to the Commission, the EU's 27 Member States (the "EU27") has a strong domestic market in bottom-fixed wind turbines, with 93% of the

[1] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

European installed offshore capacity produced in Europe. The EU Member States offshore wind market makes up 42% of the global market in terms of cumulative installed capacity. EU renewable energy industries are also in a strong position in floating offshore wind, which is an emerging technology, and by 2024 150 megawatts (MW) of floating offshore wind turbines are expected to be commissioned.

7. The strategy asserts that EU industry also leads in ocean energy technologies (such as wave and tidal), with 66% of patents in tidal and 44% of patents in wave energy developed by EU27 based companies. While a significant reduction in cost would be needed for tidal and wave energy technologies to reach their potential in the energy mix, the sector has already cut costs by 40% since 2015, faster than anticipated. Other technologies such as algal biofuels, ocean thermal energy conversion (OTEC) and floating photovoltaic installations are mentioned as promising offshore renewable alternatives.

EU's sea basins

8. The document notes the increased interest in sea basins as a focus of offshore regional cooperation programmes such as the North Seas Energy Cooperation (NESC). The North Sea is considered by the Commission to be the world leading region for deployed capacity of offshore wind, also benefitting from organisations like the OSPAR[2] Convention. Other sea basins mentioned include the Baltic, Black and Mediterranean seas and the Atlantic Ocean.

Maritime spatial planning

9. Maritime spatial planning is an important tool to establish and anticipate change in the development of offshore renewable energy and the Commission argues that it should take a holistic, multipurpose/multi-use approach. This practice has been taken up increasingly by Member States. This has demonstrated that energy infrastructure can be established alongside shipping routes and that sustainable economic activity can be developed in protected areas.

10. All coastal Member States are required to submit national maritime spatial plans to the Commission by 31 March 2021, which should include Offshore renewable energy development. The Commission encourages Member States to focus on safety and security and the protection of vulnerable marine ecosystems.

A new approach to offshore renewable energy and grid infrastructure.

[2] The Convention for the Protection of the Marine Environment of the North-East Atlantic.

11. The Commission considers that offshore renewable energy is linked with grid development and that Member States need to take a coordinated approach by together setting ambitious targets for offshore renewables in each sea basin. This cooperation should include the encouragement of so-called hybrid projects to increase interoperability. Hybrid projects differ from conventional set ups, where wind farms are connected directly to the shore, by connecting to cross border interconnectors for example – thus providing both electricity interconnection between Member States and transportation of offshore renewable energy.

12. The Commission consider that a lack of offshore grids can be a barrier to major deployment and coordination between Member States, Transmission System Operators (TSOs) and national regulatory authorities on planning grid infrastructure. More structured cooperation should be set up in the short term to aid integrated regional offshore grid planning. In the longer term regional coordination centres (organisations set up by groupings of TSOs to coordinate analysis of transmission flows) will increasingly guide cooperation and these come into operation in 2022. The Commission recommends that a robust methodology for establishing costs should be developed between Member States, generation assets and transmission projects.

A clearer EU regulatory framework for offshore renewable energy

13. The current regulatory framework was not designed with innovative projects, such as energy islands or hybrid projects and off-shore hydrogen production.

14. In hybrid projects producers of offshore renewable energy are likely to receive the lower electricity market price from the markets to which they are connected to secure dispatch. The strategy asserts that one way to improve incentives to operate hybrid projects could be to allow Member States to use congestion income (revenue collected by TSOs when allocating energy transfer between bidding zones) for reallocation to producers active in an offshore bidding zone to ensure that hybrid projects are attractive to renewable energy investors.

15. Another issue is the practical challenge of connecting projects to several markets with different connection rules. The Commission states that a common approach to grid connection requirements should be developed based on the North Sea basin.

16. The Commission notes that to date, national support measures with competitive tenders in combination with deployment objectives have played an important role in developing and upscaling renewable energy technologies. A combination of an efficient market framework, and some form of revenue

stabilisation system (de-risking, guarantees and power purchase agreements) may be required in future. While current rules under the Renewable Energy Directive (RED) favour technology neutral approaches to support, support will also be needed for emerging technologies such as tidal, wave and floating offshore wind and solar.

17. The Commission believes that the cooperation mechanisms available under the RED will encourage investment in a higher number of cross-border projects in the coming years. Cooperation mechanisms that also provide for statistical transfers or joint projects could provide landlocked Member States with an opportunity to support investment in offshore renewable energy.

Mobilising private-sector investment in offshore renewables: the role of EU funds

18. The Commission estimates that almost 800 billion euros (721.664 billion pounds)[3] of investment will be required for large-scale deployment of offshore renewable energies by 2050, two-thirds of this for grid infrastructure. Private capital is expected to make up most of this investment. However, the new InvestEU programme will be able to provide support and guarantees for emerging technologies whilst the European Investment Bank can provide lending. The released funds from the cancelled projects of the NER 300[4] (an EU funding programme) first call will be reinvested.

19. The Recovery and Resilience Facility channels 37% of its 672.5 billion Euros (606.6488 billion pounds) into the green transition. Funding under this will need to be committed by the end of 2023, so the Commission encourages Member States to be able to present a pipeline of mature projects. The Connecting Europe Facility (CEF) has a new facility for cross-border renewables generation and this will provide incentives for cooperation. The CEF infrastructure facility has already funded offshore energy projects such as the North Sea Wind Power Hub project. The renewable energy financing mechanism will be operational on 1 January 2021 and will enable Member States to share benefits to members that do not have coastline.

20. Horizon Europe and the Innovation fund will also provide support for research and innovation such as in new innovative offshore renewable energy technologies, components and solutions. The Innovation Fund can support demonstration of innovative clean technologies at commercial scale.

Focusing research and innovation on supporting offshore projects

[3] All pounds figures converted from euros in this EM use the exchange rate on the 30 October 2020.
[4] https://ec.europa.eu/clima/policies/innovation-fund/ner300_en

21. The Commission makes the case that boosting research and innovation is a key precondition for the large scale deployment of offshore energy, with EU Research and Investment (R&I) programs granting around 496 million euros (447.43168 million pounds) to offshore wind in the past 10 years.

22. The Commission expects that the trends that will increase the most over the next 10 years include superconducting generators, advanced tower materials and the added value of offshore wind energy. Floating applications should be a viable option for EU countries with deeper seas, such as in the Atlantic, the Mediterranean and the Black Sea. Tidal technologies are considered as being at pre-commercial stage and wave energy technologies at Research and Development (R&D) stage. Floating solar photovoltaic (PV) has been in industrial scale deployment in inland waterbodies and has potential in coastal areas. Algae are also a promising source of sustainable biofuels.

23. The Commission argues that offshore technologies must also be supported by innovative infrastructure and grid technology. As such the Commission will encourage the installation of the first multi-vendor multi-terminal high-voltage direct current (HVDC) system in Europe by 2030. R&I support should also facilitate testing of new technologies for offshore grids, flexibility, storage, batteries and digitalisation. The Commission will also explore how technology development in offshore renewable energy generation and infrastructure can be supported and embedded sustainably, including through the Research Mission on Healthy Oceans, Seas, Coastal and Inland Waters.

A stronger supply and value chain across Europe

24. To achieve the upscaling of capacity to reach 300 GW of offshore wind and 40 GW of ocean energy by 2050, with maximum benefits for the EU economy, the offshore renewable energy supply chain must be able to ramp up its capacity and sustain higher installation rates. Policies will be needed on both the demand and supply-side: long-term planning, regional cooperation and a clear regulatory framework are needed to provide signals to enable investment; and the Commission has highlighted the need for a more strategic approach to renewable energy industries in its Communication 'A new industrial strategy for Europe'[5]. The Commission will enhance the Clean Energy Industrial Forum on Renewables, which will have a dedicated working group set up on offshore renewable energy.

25. The increase in deployment of offshore renewable energy is dependent on overcoming challenges in terms of the labour force, with 17-32% of companies already experiencing skills gaps. The Commission encourages Member States

[5] https://ec.europa.eu/commission/presscorner/detail/en/ip_20_416

to support actions under the “European Skills Agenda for sustainable competitiveness, social fairness and resilience”. The Commission states that a circular economy approach is required in renewables research and innovation and that it is necessary to reduce dependency and shorten supply chains because of the current reliance on a global supply chain.

26. The Commission views the EU offshore renewable energy industry as highly competitive on the global market – in 2018 EU companies accounted for 47% of global exports. The Commission points out that the EU is already engaged in ‘Green Deal diplomacy’ which it is using to help create a favourable environment to develop offshore renewable energy. The Commission argues that the EU should more strongly promote its interests through trade policy.

SCRUTINY HISTORY

27. As this is the first EU Offshore Renewable Energy Strategy there is no scrutiny history. However, see below references to strategies of a similar nature.

28. (41583) 11866/20 COM(20) 952 Commission Report: Renewable Energy Progress Report was cleared by the European Scrutiny Committee in report 28, 19/20 as not raising sufficient issues of legal or political importance to warrant a substantive report to the house.

29. (41584) 11871/20 +ADDS 1-2 COM(20) 950 Commission Report: 2020 on the State of the Energy Union pursuant to Regulation (EU) 2019/1999 on the Governance of the Energy Union and Climate Action was cleared by the European Scrutiny Committee in report 28, 19/20 as not raising sufficient issues of legal or political importance to warrant a substantive report to the house.

MINISTERIAL RESPONSIBILITY

30. The Minister of State for Business, Energy and Clean Growth is primarily responsible for renewable energy policy.

INTEREST OF THE DEVOLVED ADMINISTRATIONS

31. Scottish Government Ministers, Welsh Ministers and Northern Irish Ministers have an interest in respect of the intersect with matters of devolved competence. The Devolved Administrations have been consulted in the preparation of this Explanatory Memorandum.

LEGAL AND PROCEDURAL ISSUES

32. There are no legal or procedural issues. This is not a proposal for legislation.

POLICY IMPLICATIONS

33. As of 31 January 2020, the UK is no longer a Member State, and the Transition Period will end after 31 December 2020. After this date, no new EU regulations or Directives will apply to the UK. The UK has taken necessary steps to implement EU Internal Energy Market regulation as required within the transition period.

34. It is understood that any EU regulatory changes, which impact on wholesale electricity markets, would have potential implications for Northern Ireland under the terms of the Northern Ireland Protocol, as regards maintaining the functioning of the Single Energy Market. New or revised regulations will need to be considered on a case-by-case basis as they are published.

35. The UK are currently negotiating a trade agreement with the EU which will include arrangements for efficient trading over UK EU interconnectors as well as broader energy cooperation, carbon pricing and climate change.

36. Outside of the EU, the UK has world leading strengths in offshore renewable energy and is well placed to lead and prosper as these markets grow both internationally and at home.

37. The UK continues to lead the way on climate commitments. Our ambitious domestic emissions reduction commitments are enshrined in law through the 2008 Climate Change Act, and we were one of the first major economies in the world to legislate for a 'net zero' target for greenhouse gas emissions.

38. The Prime Minister's 10 Point Plan for a Green Industrial Revolution, published on the 18th November 2020[6], will mobilise £12 billion of government investment to create and support up to 250,000 highly-skilled green jobs in the UK, and spur over three times as much private sector investment by 2030.

39. UK policy, plans and investment in relation to offshore renewable energy are summarised briefly below.

Offshore wind energy

40. The Prime Minister's 10 Point Plan for a Green Industrial Revolution included producing enough offshore wind to power every home, quadrupling how much we produce to 40GW by 2030, supporting up to 60,000 jobs. To support enlarging wind turbine industry in the UK, the Government will invest £160 million into modern ports and manufacturing, providing high quality employment in coastal regions.

[6] https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution/title

41. The UK is the world's largest offshore wind market with 10.1 GW installed, accounting for around one-third of the world's installed offshore wind capacity. The UK is maintaining its position as a global leader in offshore wind, securing around 5.5 GW of new offshore wind capacity in the most recent Contracts for Difference auction. These results show that the UK is an attractive place to invest, with a record amount of renewable capacity awarded Contracts for Difference contracts to power our homes and a significant reduction in the cost to consumers.

42. The Offshore Transmission Review, announced 15 July 2020, will bring together the key stakeholders involved in the timing, sitting, design and delivery of offshore wind to consider all aspects of the existing regime and how this influences the design and delivery of transmission infrastructure. The Review will also consider the role of multi-purpose interconnectors in meeting net zero through combining offshore wind connections with links to neighbouring markets. This is an area where it will be to the mutual benefit of the UK and the EU to work together to share knowledge and expertise.

43. The Department for Environment, Food and Rural Affairs (Defra) is working in partnership with the Department for Business, Energy & Industrial Strategy (BEIS) and The Crown Estate to identify strategic solutions to current environmental barriers to achieve the 40GW by 2030 target balanced against our ambitious targets for marine protection and the UK's shared vision for clean, healthy, safe, productive and biologically diverse seas as set out in the UK Marine Strategy. Recognising the importance of our marine environment, we are considering a target to improve the quality of our marine habitat, expressed through the condition of Marine Protected Areas.

44. Treasury has awarded Defra and BEIS £4.3m through the Shared Outcomes Fund to deliver new ways of working that will enable the responsible and sustainable growth of offshore wind, recognising its essential contribution to meeting the Government's net zero commitments, whilst ensuring the protection of our marine environment to preserve and enhance biodiversity.

Marine energy

45. Over 10 MW of tidal stream devices have been deployed for testing in the UK. This includes the world's first commercial scale tidal stream turbine (MCT SeaGen 1.2MW). The MeyGen 1a array demonstration project which began deployment in the Pentland Firth in 2016 received a £10m BEIS innovation grant, alongside other public support, and is receiving support under the Renewables Obligation.

46. The Government remains open to considering well-developed proposals for harnessing the tidal range energy in the bays and estuaries around our

coastlines, including barrage and other alternatives. Any tidal range scheme would need to demonstrate strong evidence of value for money (in the context of other renewable technologies), economic benefits, energy saving and environmental impact mitigation before the Government could take a view on its potential. We recently concluded a Call for Evidence[7] which invited views on the potential for deployment for wave, tidal and other marine energy projects across the UK. We will set out our response to this Call for Evidence in the forthcoming Energy White Paper.

CONSULTATION

47. As this report is published by the Commission for information purposes no consultation with external stakeholders has been carried out.

FINANCIAL IMPLICATIONS

48. There are no financial implications as a result of this report.

TIMETABLE

49. The Commission plans to organise a High Level European Offshore Renewable Conference in 2021 to ensure delivery of this strategy.

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[7] https://www.gov.uk/government/consultations/potential-of-marine-energy-projects-in-great-britain-call-for-evidence