Public consultation – Offshore Renewable Energy Strategy

A Eurelectric response paper

September 2020

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:
- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

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WG RES & Storage
WG Wholesale Market Design & Investment Frameworks
WG Market Integration & Network Codes

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1. A clear decarbonisation pathway

As an industry, we are committed to deliver carbon neutral power supply well before 2050 and to make a key contribution to the decarbonisation of transport, buildings and industry through electrification. Eurelectric supports the ambition of net-zero greenhouse gas (GHG) emissions in the European economy by 2050[1].

Going climate neutral means that, by 2045, the power sector needs to invest €100 billion per year in generation and storage alone[2]. However, yearly investments are currently insufficient, in the range of €60 billion per year. Significant investments will also be required in infrastructure and transmission and distribution grids, including their digitalisation, in the range of €60 to 110 billion per year[3]. Going forward, predictable, long-term, stable, transparent and market-based frameworks are needed to ensure the necessary investments in renewables, carbon neutral energy sources and key transition enabling technologies such as storage, Power-to-X and demand side flexibility, while addressing the security of supply challenge.

As demonstrated by the European Commission's long-term scenarios, a carbon neutral power system will be dominated by renewable energy sources, which would represent more than 80% of the electricity mix by 2045, complemented by other carbon neutral sources. Sharp decrease in costs of clean technologies, in particular renewables, will need to be reflected in the upcoming assessment. A significant acceleration of the pace of renewables deployment is necessary to achieve the CEP RES target, with a yearly capacity addition superior to what has been achieved so far.

The European Commission estimates between 400 and 450 GW of offshore wind power is needed to reach carbon neutrality by 2050. By the end of 2019 Europe had a total installed offshore wind capacity of around 22GW. If the NECP pledges (as of July 2020) are fulfilled, Europe will have installed 71 GW of offshore wind capacity by 2030[4].

2. Co-existence with other activities and social acceptance

Given the expected role off-shore wind in the decarbonisation of Europe, it is essential to ensure that sufficient space is found in order to allow market players to identify the most appropriate and optimal locations to develop off-shore wind parks. The importance of off-shore wind must be given high priority in the Maritime Spatial Plans that Member States have to establish by the end of March 2021, in order to be consistent with the EU's and national decarbonisation objectives and national off-shore renewable energy ambitions. Likewise, any review of the Maritime Spatial Planning Directive should put greater emphasis on climate, biodiversity and energy policies.

The Offshore Renewable Energy Strategy (ORES) should recognise and address strategic deployment issues including aviation and radar, onshore and offshore transmission, cumulative environmental impacts both in the marine and onshore areas and impacts on other users of sea space such as navigation and fishing. This is to ensure that offshore wind can be delivered in a sustainable and timely way so that: offshore transmission is delivered in a way which is efficient, attractive to investors and provides value for customers; impacts on other users of the sea space

[1] The EU power sector supports the ambition of net-zero greenhouse gas emissions in the European economy by 2050 – key enablers are needed, September 2019.
[2] Eurelectric, E-invest. The power sector investment challenge, September 2019.
[3] A Clean Planet for all A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy, COM (2018) 773 final.
[4] Wind Europe, NECP analysis: permitting problems still a major stumbling block, 24 July 2020.

and impacts of transmission infrastructure (onshore and offshore) are considered; countries are able to meet respective national security obligations, and that radars can operate effectively as the offshore wind sector expands in the coming years. Relevant stakeholders should be involved in a dialogue on co-existence of activities either with the support of the European Commission or within regional initiatives. Member States should also organise such exchanges on a national level between the relevant sectors and stakeholders. Going forward, better ways to share maritime space such as co-uses or co-locations should be explored. Research should focus on co-use and co-locations options between different economic sectors.

3. Permitting and environmental impact

It is imperative that the new simpler permitting rules in the revised Renewable Energy Directive are implemented quickly and thoroughly by Member States, in particular the single contact point and clear start and end dates for the permitting process. Moreover, national and local authorities should be adequately staffed with sufficient resources and expertise to conduct the process.

The fast-track for the permitting process should be also considered as a useful tool aimed at fostering development of the potential of offshore wind in the EU. The provisions applicable to the Projects of Common Interest (PCI) could serve as the benchmark for future rules for offshore wind.

The ORES should have a mention of the importance of seabed allocation to ensure that there is a sustainable pipeline of new projects to be developed in the 2020s and 2030s.

The deployment of renewable energy sources, including off-shore wind, to mitigate climate change could have a positive impact on the maritime environment and biodiversity. The new 2030 EU Biodiversity Strategy[5] identifies off-shore wind as a win-win solution for energy generation since it also allows for fish stock regeneration. Overall, environmental impact assessments would benefit from a common understanding on data analysis methodologies for species, habitats and ecosystems at EU level. Further cooperation and research is necessary to identify the impact of off-shore wind on the environment and biodiversity as well as methods of mitigation.

Along with the identification of sufficient space for off-shore wind development, a more thorough assessment of the location of Natura 2000 sites should be undertaken. The European Commission should organise an assessment with NGOs, research and industry to create a common understanding of off-shore wind in Natura 2000 areas.

4. Investment in off-shore wind

Getting the market framework right should be the most important focus: a strengthened and well-functioning ETS and a well-functioning market should be the main drivers for investments. Focus must be on implementing the Clean Energy Package and continuously working towards an integrated European market. Policymakers should allow the markets to work freely, as much as possible unhindered by distortions and interventions. Market barriers should be removed especially in the context of PPAs. A clear regulatory framework, adequate market designs and long-term price signals, together with higher societal engagement are critical.

In the current state of off-shore wind development, Member States may consider de-risking instruments that do not distort the short-term market and give visibility to investors such as Contract for Differences (CfD).

[5] EU Biodiversity Strategy for 2030 Bringing nature back into our lives, COM (2020) 380.

Offshore implemented in cooperation with local suppliers will play an inevitable role in the post-COVID economic recovery of the European Union. However, the latest conclusions on the Recovery and Resilience Facility establish a strict and short timeline of the proposed measure. This strict timeline should be relaxed due to complex and long development period for offshore.

5. Investment in grid infrastructure

In order to ensure the market integration of renewables and to accommodate a higher volume of variable RES in the system, Europe needs a sufficiently robust transmission and distribution grid (in terms of reinforcement, new infrastructures, and digitalisation). It ensures that resources are shared across Europe and that security of supply is addressed. The expansion of transmission grids will be crucial for off-shore wind deployment. However, traditionally these projects take time to plan and implement (up to 10 years) and frequently face local opposition. While regulators and TSOs should do their best to streamline permitting processes and ensure public support, dialogue should already start now to plan the grid connections, off-shore and on-shore, to connect the expected off-shore wind capacity by 2030. Cross-border and regional cooperation need to improve in order to avoid sub-optimal developments based only on national perspectives and accelerate the first stages of development. Examples of cross-border projects include TenneT's North Sea Wind Power Hub or Amprion's Eurobar.

Offshore wind farms generate large amounts of clean energy that may be subject to structural curtailments if the internal onshore grid is not developed sufficiently. For this reason, impediments for TSOs and DSOs to develop the internal grid for connecting offshore wind farms should be removed in order to minimise the level of generation curtailments.

In crowded offshore areas such as the North Sea and the Baltic Sea, hybrid projects combine generation and transmission, linking two or more countries via an interconnector with one or more wind farms. They could reduce the costs of and space needed by off-shore projects: costs savings can be around 5-10% of the total projects costs which translates into between EUR 300 million to EUR 2,500 million depending on the specific project[6]. Despite the possible EU added-value by increasing both market integration and supply of sustainable energy simultaneously, current EU market regulation does not provide the proper framework for offshore hybrids. Both the short- and long-term solutions should underpin the integrity of the internal market and ensure proper incentives to invest in dual use assets. At present, an asset can only be classified as generation or transmission. This does not accommodate the nature of the hybrid asset being part-time interconnector and part-time feeder line for offshore wind evacuation. An adequate implementation or adaptation of the current regulatory regime should be thoroughly considered to ensure these solutions can be developed.

[6] Roland Berger, Hybrid projects: How to reduce costs and space of offshore developments, June 2019.

6. Energy System Integration

In its EU Strategy on Energy System Integration published on 8 July, the European Commission has reaffirmed the role of direct electrification and energy efficiency as the leading drivers of the decarbonised European economy, and set out a concrete plan for 2021 and beyond.

The strategy was complemented by the Communication "A hydrogen economy for a climate-neutral Europe" and the launch of the Clean Hydrogen Alliance. While electricity is by far the most efficient decarbonisation vector, hydrogen would play an important complementary role in the decarbonisation of energy intensive sectors. The strategy to establish a clean hydrogen value chain presented by the Commission is comprehensive. During the implementation, it remains critical to ensure that due attention is given to direct electrification measures, as they will be the most efficient and account for the larger CO2 abatement effects in the short and medium term[7].

Because of the high capacity factor of off-shore wind, it is expected that off-shore wind could contribute significantly to a renewable hydrogen-based economy. An appropriate regulatory framework should ensure the integration of renewables with hard-to-abate industry sectors (e.g. steel, chemicals) and transport sectors (maritime, aviation). Regulation should remain technology neutral, ensuring a level playing field between different energy carriers. All energy carriers should internalise the cost due to their carbon footprint.

Strong grids will be essential to support the integration of decarbonised and renewable energy carriers in all sectors of the economy, whether they are related to power, gas or heat. In addition to the development of a proper investment framework, we call to identify best links between sectors through coordinated, cost-effective and future-proof infrastructure planning tools. In a more decarbonised, decentralised and digitalised energy system, closer cooperation is required among all stakeholders (especially TSOs and DSOs) to anticipate possible evolutions of the electricity, heat and gas networks, supply & demand. Specific emphasis should be put on multi sectoral synergy projects such as renewable Cross-Border Projects in the review of the TEN-E Regulation. For instance, projects aiming at maximising the deployment and integration of offshore renewables to two or more countries could be prioritised[8]. In its study "Ports: Green Gateways to Europe", Eurelectric highlighted the importance ports have played in the development of offshore wind in the North and Baltic Seas. On the one hand, ports often have strong grid networks, connect large electricity consumers, and are the natural landing point for the huge planned capacity of offshore wind. This offers the opportunity to connect large quantities of renewable electricity to the port's grid and directly consume it, e.g. by electric heating or indirectly in industrial processes using hydrogen. On the other hand, they have potential to support the construction and operation activities of the offshore wind farms. To manufacture and transport the materials needed for these large wind turbines, large lay-down areas and heavy lift equipment is required, at locations close to the shore.

[7] See Eurelectric recommendations for a Smart Sector Integration and our response paper to the European Commission questions.

[8] Eurelectric Response to the Targeted Consultation on the Revision of the TEN-E Regulation, July 2020.

7. Research & Development and Future Technologies

In addition to the items above (see section 1), the ORES should have a focus on funding collaborative research development & demonstration to increase competitiveness and further reduce costs. Innovation activity to include a focus on increasing the competitiveness of goods and services, including artificial intelligence, digital and robotic technologies for surveying and operations and maintenance, and next generation technologies contributing to cost reduction and higher load factors. Another important area pertains to decommissioning solutions especially in the long-term in order to ensure access to advanced solutions of turbines or assets recycling.

The ORSE should include the need to develop frameworks to support future technology. There should be a recommendation for governments and industry to work together on the best way to bring forward new technologies such as floating offshore wind and hybrid projects, consistent with the principles of competition and maximising value for consumers.

8. Skills

The ORES should have a focus on working skills and encourage Member States to ensure that offshore wind sector action is aligned and complements the Member State's wider skills agenda. There should be collaboration on skills with other sectors such as oil and gas, nuclear and automotive. Sectors such as the offshore wind sector are going to place a high demand on skilled workers in the future so there must be appropriate training and communicating with other sectors that require skilled workers to ensure that there is no shortage in one or multiple sectors.

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability

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OFFSHORE RENEWABLE ENERGY STRATEGY

Fields marked with * are mandatory.

Introduction

The European Green Deal sets out the ambition to make Europe the first climate-neutral continent by 2050, while addressing other environmental-related challenges, boosting the economy, improving people's health and quality of life, and ensuring an inclusive and just transition.

As part of the efforts to implement the transition to a climate-neutral and environmentally friendly society, the Commission will propose a new approach for exploiting Europe’s offshore renewable energy potential in a sustainable and inclusive way. This will help all Europeans to have access to more affordable clean energy and contribute to the EU’s security of energy supply. Furthermore, the recovery from the COVID-19 crisis, in particular through the “Next Generation EU” instrument, will be based on investments in line with the Green Deal priorities as key drivers for European jobs and economically sustainable and inclusive growth. EU-wide deployment of offshore renewable energy is also in line with the recovery priorities of digital transition and enhancing resilience with related value chains being highly relevant in this perspective. Investments will respect the “no harm” principle.

As part of the Green Deal, the Commission will adopt a European offshore renewable energy strategy to give a strategic direction for the ambitious development and integration of this type of energy by 2030 and 2050. This way forward is important for all stakeholders, ranging from national, regional and local authorities to businesses, social partners, civil society organisations, research and innovation organisations, as well as individual citizens, and it will be a fundamental driver for investment.
Please note that the scope of the strategy includes all European seas (North Sea, Baltic Sea, Mediterranean Sea and Black Sea) and the Atlantic Ocean.

Recognizing the developments achieved so far, the European offshore renewable energy strategy will build on and facilitate existing activities and projects, as well as trigger and foster new ones. The strategy will guide and enable a larger and a faster development of sustainable offshore renewable energy in Europe by offering certainties and opportunities to stakeholders from all sectors of our society and economy. Notably, the strategy will address a wide range of policy fields aiming at:

- supporting and better adapting the deployment and development of large scale offshore renewable energy by developing the grid and energy system, market arrangements and related renewable policies;
- ensuring sustainability and environmental and biodiversity protection;
- enhancing public information and engagement at EU and local level;
- grasping the whole potential of the blue economy by addressing maritime spatial planning policies and fostering the development of new business models where relevant;

- steering industrial development, jobs creation and human capital formation and capacity building to grasp the offshore energy potential to drive growth across the whole EU ;
- cultivating Europe's global leadership in the sector and supporting businesses;
- promoting investment and supporting value chain integration and trade;
- supporting research and innovation of innovative critical technologies;
- promoting regional and transnational development and cooperation policies, including with third countries.

Guidance on the questionnaire

Thank you for taking part in this consultation.
We want to hear your views on how to make the European offshore renewable energy strategy as sustainable, effective, inclusive and ambitious as possible. Share with us your ideas, advice or practical examples related to the proposed topics, existing activities you know of or are involved in, and possible new activities in the context of offshore renewable energy.
All replies to the questionnaire as well as uploaded position papers and policy briefs will be published online. Please read the privacy statement on how personal data and contributions will be processed.
Following some introductory questions about yourself, the questionnaire continues with questions about the European offshore renewable energy strategy. The estimated time for completion is 25 minutes. The questions cover the following topics:
1.Your involvement in offshore activities and interest in the strategy
2.Sustainability and environmental aspects
3.Public information
4.Marine Resources and Human activities at sea (Maritime Spatial Planning)
5.Energy grid, markets and renewable policy
6.Industrial development, employment and human capital development
7.Research and innovation
8.Funding and Financing
9.Regional and transnational development policy and cooperation, including with 3rd countries
10.Ideas and suggestions for further development

To ensure that all opinions are heard and taken into account, some sections include two parts: the first part is accessible to all participants; the second one includes specific questions targeting only the stakeholders of the offshore renewable energy sector.

Please note there is a session timeout for the submission of your contribution after 60 minutes; this is an automatic security feature. In order to avoid any loss of data, do not forget to use the "Save as Draft" option on the top right side of your screen before the 60 minutes expire. You can subsequently resume work on your contribution, and submit once completed.

About you

* Publication privacy settings

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

- **Anonymous**
  Only your type of respondent, country of origin and contribution will be published. All other personal details (name, organisation name and size, transparency register number) will not be published.
- **Public**
  Your personal details (name, organisation name and size, transparency register number, country of origin) will be published with your contribution.

* Language of my contribution

- Bulgarian
- Croatian
- Czech
- Danish
- Dutch
- English
- Estonian
- Finnish
- French
- Gaelic
- German
- Greek
- Hungarian
- Italian
- Latvian
- Lithuanian
- Maltese
- Polish
- Portuguese
- Romanian
- Slovak
- Slovenian
- Spanish
- Swedish

* I am giving my contribution as

- ○ Academic/research institution
- ◉ Business association
- ○ Company/business organisation
- ○ Consumer organisation
- ○ EU citizen
- ○ Environmental organisation
- ○ Non-EU citizen
- ○ Non-governmental organisation (NGO)
- ○ Public authority
- ○ Trade union
- ○ Other

* First name

Helene

* Surname

LAVRAY

* Email (this won't be published)

hlavray@eurelectric.org

* Country of origin

Please add your country of origin, or that of your organisation.

- ○ Afghanistan
- ○ Åland Islands
- ○ Albania
- ○ Algeria
- ○ American Samoa
- ○ Andorra
- ○ Djibouti
- ○ Dominica
- ○ Dominican Republic
- ○ Ecuador
- ○ Egypt
- ○ El Salvador
- ○ Libya
- ○ Liechtenstein
- ○ Lithuania
- ○ Luxembourg
- ○ Macau
- ○ Madagascar
- ○ Saint Martin
- ○ Saint Pierre and Miquelon
- ○ Saint Vincent and the Grenadines
- ○ Samoa
- ○ San Marino
- ○ São Tomé and Príncipe

- Angola
- Anguilla
- Antarctica
- Antigua and Barbuda
- Argentina
- Armenia
- Aruba
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
- Barbados
- Belarus
- Belgium
- Belize
- Benin
- Bermuda
- Bhutan
- Bolivia
- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Equatorial Guinea
- Eritrea
- Estonia
- Eswatini
- Ethiopia
- Falkland Islands
- Faroe Islands
- Fiji
- Finland
- France
- French Guiana
- French Polynesia
- French Southern and Antarctic Lands
- Gabon
- Georgia
- Germany
- Ghana
- Gibraltar
- Greece
- Greenland
- Grenada
- Guadeloupe
- Guam
- Malawi
- Malaysia
- Maldives
- Mali
- Malta
- Marshall Islands
- Martinique
- Mauritania
- Mauritius
- Mayotte
- Mexico
- Micronesia
- Moldova
- Monaco
- Mongolia
- Montenegro
- Montserrat
- Morocco
- Mozambique
- Myanmar /Burma
- Namibia
- Nauru
- Nepal
- Saudi Arabia
- Senegal
- Serbia
- Seychelles
- Sierra Leone
- Singapore
- Sint Maarten
- Slovakia
- Slovenia
- Solomon Islands
- Somalia
- South Africa
- South Georgia and the South Sandwich Islands
- South Korea
- South Sudan
- Spain
- Sri Lanka
- Sudan
- Suriname
- Svalbard and Jan Mayen
- Sweden
- Switzerland
- Syria

- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- Brunei
- Bulgaria
- Burkina Faso
- Burundi
- Cambodia
- Cameroon
- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
- China
- Christmas Island
- Clipperton
- Cocos (Keeling) Islands
- Colombia
- Guatemala
- Guernsey
- Guinea
- Guinea-Bissau
- Guyana
- Haiti
- Heard Island and McDonald Islands
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Israel
- Italy
- Jamaica
- Japan
- Jersey
- Netherlands
- New Caledonia
- New Zealand
- Nicaragua
- Niger
- Nigeria
- Niue
- Norfolk Island
- Northern Mariana Islands
- North Korea
- North Macedonia
- Norway
- Oman
- Pakistan
- Palau
- Palestine
- Panama
- Papua New Guinea
- Paraguay
- Peru
- Philippines
- Pitcairn Islands
- Taiwan
- Tajikistan
- Tanzania
- Thailand
- The Gambia
- Timor-Leste
- Togo
- Tokelau
- Tonga
- Trinidad and Tobago
- Tunisia
- Turkey
- Turkmenistan
- Turks and Caicos Islands
- Tuvalu
- Uganda
- Ukraine
- United Arab Emirates
- United Kingdom
- United States
- United States Minor Outlying Islands
- Uruguay

- Comoros
- Congo
- Cook Islands
- Costa Rica
- Côte d'Ivoire
- Croatia
- Cuba
- Curaçao
- Cyprus
- Czechia
- Democratic Republic of the Congo
- Denmark
- Jordan
- Kazakhstan
- Kenya
- Kiribati
- Kosovo
- Kuwait
- Kyrgyzstan
- Laos
- Latvia
- Lebanon
- Lesotho
- Liberia
- Poland
- Portugal
- Puerto Rico
- Qatar
- Réunion
- Romania
- Russia
- Rwanda
- Saint Barthélemy
- Saint Helena Ascension and Tristan da Cunha
- Saint Kitts and Nevis
- Saint Lucia
- US Virgin Islands
- Uzbekistan
- Vanuatu
- Vatican City
- Venezuela
- Vietnam
- Wallis and Futuna
- Western Sahara
- Yemen
- Zambia
- Zimbabwe

* Organisation name

255 character(s) maximum

Eurelectric

* Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
- Medium (50 to 249 employees)
- Large (250 or more)

Transparency register number

255 character(s) maximum

Check if your organisation is on the transparency register. It's a voluntary database for organisations seeking to influence EU decision-making.

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☑ I agree with the personal data protection provisions

Questions

1. Your involvement in offshore activities and interest in the strategy

The strategy aims at better exploiting Europe's sustainable offshore renewable energy potential.
In this section, we would like to ask you some questions regarding your interest in offshore activities and your perceptions of the current and emerging needs that would enable a large and sustainable development of the offshore renewable energy sector.

1.1. To what extent do you agree or disagree with the following assertions related to your knowledge and perception on offshore renewable energy?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I do not know
I have a good knowledge on the existing offshore renewable energy technologies	○	○	○	○	◉	○
I think offshore renewable energy is not sufficiently exploited today in Europe	○	○	○	○	◉	○
I think my Member State/the Member State where my organisation is active should foster the deployment of offshore renewable energy with adequate policies	○	○	○	○	◉	○
I think the European Union should foster the deployment of offshore renewable energy with adequate policies	○	○	○	○	◉	○
I think the development of the offshore energy sector in the EU could play a major role in recovering from the current Covid-19 related economic crisis	○	○	○	○	◉	○
I think the deployment of offshore renewable energy needs to be accelerated in Europe	○	○	○	○	◉	○

Please elaborate your answers if you deem necessary

500 character(s) maximum

The Covid-19 crisis is one of the EU's biggest challenges so far. Large investments in a clean and secure energy supply would help to overcome this economic crisis. This would create safe and sustainable jobs across Europe. The expansion of offshore wind energy, ensures added value and sustainable jobs even far away from the actual locations of the offshore wind farms. With the right framework conditions and continuous investments those jobs can be maintained or even expanded.

1.2. To what extent do you agree or disagree with the following assertions? The deployment of offshore renewable energy…

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I do not know
…will benefit the EU's security of energy supply	○	○	○	○	◉	○
…will benefit the EU's industries and companies	○	○	○	○	◉	○
…will benefit EU consumers and local communities	○	○	○	○	◉	○
…will benefit EU employment	○	○	○	○	◉	○

Please elaborate your answers if you deem necessary.

500 character(s) maximum

Due to its high full load hours, offshore wind energy is considered to be one of the more reliable energy sources in the field of renewable energies. However, further measures are necessary to ensure security of supply in a decarbonised energy system with high amounts of renewable energies e. g. grid expansion, storage, demand-side management, flexible and firm decarbonised capacity. The European Off-shore RES strategy should include such analysis.

1.3. Are you or your organisation involved or have an active interest in offshore activities?

- ◉ Yes
- ○ No

If yes, what is your interest (oil and gas, ocean energy manufacturer, ocean energy financer, ocean energy project developer, maritime transport, fishery, NGOs, coastal communities…)?

100 character(s) maximum

Electricity supply

1.4. On an annual basis, what part of your personal / your organisation's business activities (allocated budget) are related to offshore renewable energy?

- ○ Very few - less than 5%
- ○ Some activities - between 5% and 50%
- ○ Many activities - more than 50%
- ○ Most activities - more than 90%
- ◉ Do not know

1.5. How would you qualify the following actions related to the deployment of offshore renewable energy in the EU?

	Not necessary	Neutral	Necessary but does not require EU measures /initiatives	Necessary and requires EU measures/initiatives	Do not know
Improving access to and use of sea for offshore energy	○	○	○	◉	○
Implementing a more suitable market regulatory framework	○	○	○	◉	○
Developing/Improving onshore and offshore grid	○	○	○	◉	○
Improving financing conditions, support and incentives, and developing new business models	○	○	○	◉	○
Fostering training, human capital development and capacity building	○	○	○	◉	○
Promoting the development of the industrial infrastructure and supply chain	○	○	◉	○	○
Promoting research and development, innovation and technology development	○	○	○	◉	○
Improving regional and transnational cooperation	○	○	○	◉	○
Improving public understanding and support	○	○	◉	○	○

1.6. What initiatives could incentivize you/your organisation most to increase your offshore renewable energy activities?

at most 3 choice(s)

- [x] Facilitating permitting and authorisation
- [x] Cross-border cooperation to allow a long-term maritime plan that foresees enough room for offshore renewable energy
- [x] Support the adaptation of the energy network to the large scale-up of offshore renewables
- [ ] Support to research and innovation and for commercial scale demonstration plants
- [ ] Stronger harmonisation of technical requirements and/or regulatory frameworks at EU level
- [ ] Greater knowledge of existing support measures which I/my organisation can benefit from
- [ ] More regional and transnational cooperation including with countries outside the EU
- [ ] Renewables policies setting [sector specific] targets and trajectories
- [ ] Improved financing conditions, support and incentives
- [ ] Availability of skilled workers and targeted retraining opportunities
- [ ] Other

Please elaborate your answers if you deem necessary.

500 character(s) maximum

The EU could support the industry by boosting cross-border offshore projects e.g. in the Atlantic. Better coordination in the maritime planning of the MS can help to provide additional areas for Offshore Wind. Support for adapting the energy grid and improving the refinancing of offshore projects are also essential and should be supported by the EU.

2. Sustainability, environmental protection

2.1. To what extent are the environmental impacts of offshore renewable energy activities currently considered by project developers in your country?

- ( ) Not at all
- ( ) Very little
- ( ) Somewhat
- ( ) Significantly
- (•) Very much

- ○ Too much
- ○ Don’t know

2.2. What could be the main environmental issue related to the deployment of offshore renewable energy?

- ○ There are no major environmental issue related to the deployment of offshore
- ◉ Issues are compensated by positive impacts (reserve / biomass effects, reef effects…)
- ○ Wildlife environmental negative impact: impact on fish, birds…
- ○ Marine ecosystem negative impact: impact on the marine flora and fauna.
- ○ Pollution and climate negative impacts
- ○ Other [100 characters maximum]

2.3. What measures at EU level could help the most to ensure the sustainable development of offshore renewable energy?

at most 3 choice(s)

- ☐ Sustainable building and installation of offshore assets
- ☑ Sustainable operation and maintenance activities
- ☐ Sustainable management of assets end-of-life: decommissioning, recycling of components
- ☐ Sustainable supply chain (decarbonisation of externalities, use of raw materials)
- ☐ Mitigation measures of the impact on marine ecosystems
- ☑ Maritime plans with clear determination of areas that are suitable for offshore wind
- ☑ Planning of optimized offshore electric grid infrastructures at regional /transnational level
- ☐ Other [300 characters maximum]

Please explain your answer

500 character(s) maximum

3. Public Information

3.1. To what extent do you agree or disagree with the following assertions related to consulting the public when developing offshore renewable energy projects?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I do not know
Information (technical, financial, regulatory) is easily available to public	○	○	◉	○	○	○
Public consultation is sufficiently taken into account within projects development processes	○	○	○	○	◉	○
Additional measures/regulations need to be taken at EU level to strengthen public consultation processes	○	◉	○	○	○	○

Please explain your answer.

500 character(s) maximum

3.2. What measures at EU level could help the most to inform the public on offshore renewable energies?

at most 3 choice(s)

- [ ] Better public information on offshore technologies
- [x] Better public information about the general energy choices needed to decarbonise the EU economy
- [ ] Better public information on the environmental impact (negative and positive) of offshore renewable energies (construction and installation activities, material uses…)
- [x] Better public information on the potential for industry and workers in Europe (growth, employment…)
- [ ] Better public information on economic models of offshore renewable energy (costs, impact on electricity prices for consumers…)
- [ ] Other [300 characters maximum]
- [ ] No need to increase public support to offshore renewable energy

4. Marine Resources and Human activities at sea (Maritime Spatial Planning)[1],[2]

The ability to secure, access, use and share maritime space in a sustainable way will be crucial for the large scale development of offshore renewable energy in Europe. To that end, maritime spatial planning is required and multi-use of marine space might be beneficial for all sectors involved in the mid- to long-term perspective.

[1] Within this questionnaire, the term “marine” is used to refer to the natural sea ecosystem at large whereas the term “maritime” is used to refer to human activities related to the sea.

[2] Maritime Spatial Planning- DIRECTIVE 2014/89/EU.

4.1. Do you think the access to sea is a limiting factor to the development of offshore renewable energies?

- ○ Not at all
- ○ Very little
- ○ Somewhat
- ○ Significantly
- ◉ Very much
- ○ Don’t know

4.2. Have you or your organisation been confronted with space issues at seas related to offshore renewable energies?

- (●) Yes
- ( ) No

If yes, please explain your answer. How? Where? With which other sector? What issues?

500 character(s) maximum

Overlap with fishing areas
Overlap with maritime protected areas or nature reserves
Overlap with areas for exploration of gravel
Proximity to shipping routes and/or safety zones
Minimum distance to the shore (especially to tourist areas)

4.3. To what extent do you agree or disagree with the following assertions related to use and sharing of seas for renewable energies activities?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I do not know
Integrated sea-basin strategies are crucial for the development of offshore renewable energies and grid	( )	( )	( )	(●)	( )	( )
Promoting and fostering multi-use of sea is crucial for offshore renewable energy deployment	( )	( )	( )	(●)	( )	( )
Compensation should be provided to activities that might be excluded because of offshore renewable developments	(●)	( )	( )	( )	( )	( )

5. Energy grid, market and renewable policy

The deployment of large-scale offshore renewable energy will require some adaptation to the EU energy system in terms of infrastructures, market arrangements and renewable policies. Notably, considerable offshore and onshore grid development will be needed to ensure the transport of large amounts of energy to shore and, from there, to cities inland and large consumption sites.

5.1. How would you rate the importance of the following objectives to steer the development of European offshore energy infrastructure?

	Not Important	Important to a small extent	Important to a large extent	Important	I do not know
Enable decarbonisation of EU energy sector	○	○	○	◉	○
Enable a competitive and properly functioning integrated energy market	○	○	○	◉	○
Strengthen EU energy security of supply	○	○	○	◉	○

5.2. In what order of priority should the European Commission consider the following measures related to the deployment of offshore renewable energy? *[1 being the highest priority, 4 the lowest]*

	4	3	2	1
EC action should deliver significant contribution to renewables targets	○	○	○	◉
EC action should keep overall system costs to consumers as low as possible	○	◉	○	○
EC action should integrate renewables efficiently and sustainably in the energy system	○	○	◉	○
EC action should bring certainty on project revenues for developers	◉	○	○	○

Please explain your answer.

500 character(s) maximum

The primary objective should be to ensure that the EU RES target can be achieved. The energy transition must be economically efficient and sustainable. Low overall costs, which is guaranteed if the expansion of RES is done in an efficient way, is an important aspect in achieving high levels of consumer acceptance. In addition, planners and investors must be guaranteed planning security with regard to their projects, as they have to bear the high investment costs of their projects.

5.3. Regarding the regulatory framework, what measures could help most with the deployment of offshore renewable energy in the EU?

at most 2 choice(s)

- ☐ Making the access to finance and funding, and support schemes and incentives easier
- ☑ A more integrated and cross-sectorial energy strategy
- ☐ A clearer market regulatory framework
- ☐ A concrete EU development plan with clear commitments and capacity targets
- ☑ Clarify and facilitate permitting and authorisation of offshore grids and assets

☐ Other [100 characters maximum]

Please explain your answer.

500 character(s) maximum

The development of offshore energy must be considered holistically. Offshore wind is key to decarbonize power consumption but due to its high full load hours, it is also a key source for renewable H2 production, which might be consumed close to the coast (e.g. harbors) or further away. Excess production of electricity from offshore wind can be stored and used at a late stage when not enough renewable/decarbonized power is available in order to decarbonize power generation and other consumptions.

5.4. Regarding the regulatory framework...

5.4.1 Do you think EU guidance on how to apply market rules in the offshore renewable energy sector is required?

◉ Yes

○ No

If Yes, please explain your answer.

500 character(s) maximum

At present, an asset can only be classified as generation or transmission. This does not accommodate the nature of the hybrid asset being part-time interconnector and part-time feeder line for offshore wind evacuation. An adequate implementation or adaptation of the current regulatory regime should be thoroughly considered to ensure these solutions can be developed.

5.4.2. Do you think a stronger market regulatory harmonisation, e.g. of system operation or grid connection rules, is required?

◉ Yes

○ No

If Yes, please explain your answer.

500 character(s) maximum

The best solution to enable each MS to participate in the development of the offshore grid according to its own goals is a collaborative, flexible and modular approach. There is also a need for standards to be defined in the field of offshore HVDC technology together with industrial stakeholders. In terms of network operation, the EU TSOs have been working together successfully across borders for decades. There is no need for greater harmonization here

5.4.3. Do you think the current regulatory environment in my home country is ensuring that investments into offshore fixed bottom /floating wind or other technologies (please indicate in your answer) are sufficient and allow a return on investment in a reasonable time?

- ○ Yes
- ◉ No

Please explain your answer

500 character(s) maximum

5.5. Offshore wind/other technology (please indicate which in your answer) are best promoted through...

- ○ Market premiums and/or contracts for difference
- ○ Power Purchase Agreements (PPAs)
- ○ Sharing arrangements for grid connection costs
- ○ New local or regional level business models, incl. cooperative approaches
- ◉ Other…

Please explain your answer.

500 character(s) maximum

Getting the market framework right should be the most important priority. Focus must be on implementing the CEP and continuously working towards an integrated European market. Policymakers should allow the markets to work freely, as much as possible unhindered by distortions and interventions. Market barriers should be removed especially in the context of PPAs. MS may consider de-risking instruments that do not distort the short-term market and give visibility to investors such as CfD.

6. Industrial development, employment and human capital development

Developing offshore renewable energy requires a suitable industry and infrastructure, while a workforce with the necessary knowledge, skills and training is essential.

6.1. What measures could help the most to develop the offshore renewable industry in the EU?

at most 2 choice(s)

- ☑ Improved access to existing financing, support and incentives /Develop new financing, funds, incentives
- ☐ A more integrated, cross-sector industrial strategy
- ☑ A clearer market regulatory framework
- ☐ Development of skills and occupational safety and health across the value chain
- ☐ Other [100 characters maximum]

6.2. In your opinion, what are the biggest obstacles to the development of an offshore renewable industry in the EU?

at most 3 choice(s)

- [x] Political buy-in and long-term investment certainty
- [ ] Procurement of raw and critical materials
- [ ] Lack of skilled staff and/or human capacity building provision
- [ ] Lack of industrial infrastructures (manufacturing, transport, building)
- [ ] Unawareness of/Difficulties to have access to funds
- [x] Financing costs
- [ ] Uncertainty about an EU offshore development plan
- [x] Uncertainty regarding the legislative framework
- [ ] Uncertainty regarding the long-term economic benefits
- [ ] Regulatory obstacles
- [ ] Lack of support to SMEs
- [ ] Other [100 characters maximum]

6.3. Which categories of qualified workers with specific offshore renewable energy knowledge are most needed today?

at most 2 choice(s)

- [x] Technicians
- [x] Engineers
- [ ] Researchers
- [ ] Sustainable finance experts
- [ ] Other [100 characters maximum]

6.4. In which sectors of the offshore renewable energy industry is the development of knowledge and skills most needed today?

at most 2 choice(s)

- [x] Manufacturing of critical components (including infrastructure components)
- [ ] Research and development
- [ ] Onshore and/or offshore transport of critical components
- [x] Installation, Operation and Maintenance
- [ ] Other [100 characters maximum]

7. Research and Innovation

7.1. What are the main areas of technology on which Research and Innovation should focus in order to help the development of large-scale offshore renewable energy in the EU?

at most 4 choice(s)

- [x] Wind Turbines technology
- [ ] Tidal stream technology
- [ ] Wave energy technology
- [ ] Ocean thermal energy conversion, Sea-Water Air Conditioning
- [ ] Salinity gradient technology
- [ ] Floating PV
- [ ] Maritime transport innovations
- [x] Infrastructure and supply chain innovations
- [x] Recycling and decommissioning solutions
- [x] Offshore energy conversion and storage innovations (power-to-X, energy islands concept…)
- [ ] Environmental and biodiversity protection related technologies
- [ ] Control and monitoring systems innovations for offshore assets
- [ ] Resource assessment
- [ ] Other

Please explain your answer.

500 character(s) maximum

7.2. Have you ever been involved in a Research and Innovation project related to offshore renewable energy?

- ( ) Yes
- (•) No

8. Funding & Financing

8.1. To what extent are you aware of EU funding or financing programmes supporting offshore renewable energy development?

- ( ) I am not aware of any relevant EU funding or financing programmes
- (•) I am aware of some relevant EU funding or financing programmes
- ( ) I am well aware of relevant EU funding or financing programmes

8.2. Which sectors do you think EU funding or financing programmes should prioritise in order to promote the development of renewable offshore energy in the EU?

at most 2 choice(s)

- [ ] Research and Innovation
- [x] Pilot and pre-commercial projects
- [x] Upscaling and faster deployment supporting national deployment
- [ ] Industrial capacity and infrastructure
- [ ] Skills, knowledge and vocational education training
- [ ] Maritime transport and ports upgrading
- [ ] Export support
- [ ] Other [100 characters maximum]

Please explain your answer.

500 character(s) maximum

Investments should be promoted in project development and the establishment of offshore wind in the individual MS in order to achieve the greatest possible benefit from the used funds.

8.3. To what extent do you agree or disagree with the following assertions related to funding and financing in the context of offshore renewable energy projects development?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I don't know
Access to dedicated revenue support at national level is essential to unlock pilot and pre-commercial projects	○	○	○	○	◉	○
EU instruments are needed to reduce financing costs of innovative offshore renewable energy by providing grants, guaranteed loans, or concessional lending.	○	○	○	○	◉	○
Targeted EU instruments are needed to support training, reskilling and upskilling to ensure availability of a skilled workforce	○	○	○	○	◉	○

Channel existing EU R&I funding into offshore renewable energy is required	○	○	○	○	◉	○
Streamlining due diligence and similar timelines to access different financial instruments is required	○	○	○	○	◉	○
Building international partnerships with 3rd countries to mutualise investments is required	○	○	○	◉	○	○
Financing support for development of European value chains and production of equipment within the EU for deployment internationally.	○	○	○	◉	○	○
Support provided in the EU programmes suffices but should be better utilised by the offshore renewable energy sector.	◉	○	○	○	○	○

9. Regional and transnational development policy and cooperation

9.1. To what extent do you agree or disagree with the following assertions related to regional and transnational issues in the context of offshore renewable energy deployment?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	I don't know
Offshore renewable energy development could be relevant and positive for the region in which my organisation is active (specify which region in the box available below this table)	○	○	○	○	◉	○
Offshore renewable energy development could be relevant and positive for any region of the EU	○	○	○	◉	○	○
The lack of transnational cooperation might be an obstacle to the development of the offshore renewable energy in the EU	○	○	○	○	◉	○

The EU should play a major role in steering the cooperation between countries and regions to foster the development of offshore renewable energy	○	○	○	○	◉	○

Please explain your answer.

500 character(s) maximum

The expansion of offshore wind energy provides added value and sustainable jobs. It is also very important that the EU simplifies and supports cross-border projects.

9.2. In which areas do you believe that transnational and regional cooperation is the most crucial to contribute to the deployment of offshore renewable energy?

at most 3 choice(s)

- [x] Energy grid development
- [x] Maritime spatial planning
- [ ] Integration of the supply chain
- [ ] Development of clusters and new industrial ecosystems
- [ ] Transport
- [ ] Support schemes
- [ ] Tender procedures
- [x] Research and Innovation
- [ ] Financing
- [ ] Permitting
- [ ] Other [100 characters maximum]

9.3. What are the main obstacles of cross-border cooperation at the moment in grids, markets and offshore renewables?

500 character(s) maximum

The regulatory framework in the individual MS vary greatly. Better cross-border agreements and best-practice sharing (e.g. for tenders, regulations for co-existence) would make many processes easier.
Constraints imposed by other marine activities as well as electricity grid aspects tend to increase uncertainty and a risk of potential delays or even project failures.
Lack of new market models limiting grid constraints.

10. Ideas and suggestions for further development

The European offshore renewable energy strategy will build as much as possible on existing frameworks and initiatives to enable the massive development of offshore renewable energy.

10.1. How do you believe the strategy can best complement or scale-up existing national and EU frameworks and initiatives and add value? Please refer to the specific frameworks/initiatives considered (maximum two)

400 character(s) maximum

Cross-border offshore projects through e.g. the support of joint projects in regional cooperation, the impetus to create a new EU legal framework, with the aim to simplify cross-border projects and grid connections. Green H2 via power-to-gas using offshore wind is very promising. This potential should be used especially for systems that will be connected to the grid of several Member States.

10.2. Do you believe there are excessive regulatory burdens or regulatory inconsistencies that need to be addressed to support the development of offshore energy?
If so can you specify precisely which and at which level (EU or national).

500 character(s) maximum

The EU legal framework should be in line with EU energy and climate goals and be coherent and consistent.

10.3. Are you aware of any material/documentation (position papers, databases, studies) that would be relevant for further information? Could you please list relevant sources of information?

400 character(s) maximum

https://www.agora-energiewende.de/fileadmin2/Projekte/2019/Offshore_Potentials/176_A-EW_A-VW_Offshore-Potentials_Publication_WEB.pdf
https://op.europa.eu/en/publication-detail/-/publication/59165f6d-802e-11e9-9f05-01aa75ed71a1/language-en?WT.mc_id=Searchresult&WT.ria_c=37085&WT.ria_f=3608&WT.ria_ev=search
https://www.diw.de/documents/publikationen/73/diw_01.c.594100.de/18-28-3.pdf

10.4. Documents upload and final comments

Please feel free to upload a concise document. The maximum file size is 1 MB. The uploaded document will be published alongside your response to the questionnaire which is the essential input to this public consultation. The document is optional and serves as additional background reading to better understand your position.

Please upload your file.

The maximum file size is 1 MB
Only files of the type pdf,txt,doc,docx,odt,rtf are allowed

10.5. If you wish to add further information — within the scope of this questionnaire — please feel free to do so here.

750 character(s) maximum

Thank you for participating in this public consultation. Your views, ideas and suggestions are valuable to us. All replies will be analysed and receive due consideration. We will prepare a written summary of the results. We will publish this summary online, together with any uploaded position papers and policy briefs. Please stay informed by consulting the website of the European Commission: https://ec.europa.eu/info/index_en

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