NEW HORIZONS: THE SPACE NEEDED FOR OFFSHORE WIND ENERGY IN THE EU BY 2030 AND 2040

October 2024

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CONTENTS

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EXECUTIVE SUMMARY

In 2020, the European Commission released the first EU strategy on offshore renewable energy, setting the objective of reaching 60 GW of offshore wind by 2030 and 300 GW by 2050. Since then, EU countries have pledged to achieve more for 2030, with the objective of reaching between 111-116 GW, as set out in the (non-binding) agreements by sea basin.[1] Two of the challenges highlighted during the Renewable Energy Directive negotiations were the need to accelerate designation and simplify the permitting processes in order to ensure the deployment of renewables is aligned with EU climate neutrality targets.

This brief looks firstly at the estimated space that is required at sea to achieve the levels of offshore wind energy capacity Member States identified in their non-binding pledges for deployment of this energy by 2030 and 2040, as well as the levels of offshore wind needed to fulfil the Paris Agreement Compatible (PAC) energy scenario for climate neutrality and a fully renewable energy system by 2040. Secondly, the brief compares the space required to fulfil the offshore wind targets with the space already allocated by Member States in the European Union (EU).

Out of the 22 coastal Member States in the European Union (EU), 10 have data available on the EU marine database regarding the space they have allocated for offshore wind in their national Maritime Spatial Plan. This brief focuses on these 10 Member States, but also provides estimates of the space the other 12 should allocate to meet their pledges.

Overall, the results of this analysis show that generally, **Member States have allocated enough space at sea to achieve their non-binding pledges for offshore wind for 2030 and 2040, and in some cases exceed them. The majority of countries have also allocated enough space to reach the level of offshore wind in the PAC scenario**, although it should be noted that the PAC scenario foresees a near halving in energy demand by 2040, and if that is not achieved then higher levels of renewable energy supply, including offshore wind, will be needed. The nature of the PAC modelling and the source data also mean the figures may not align in every case with recent real-world data or with what may be possible and desirable, and it does not necessarily represent WWF views on the appropriate level of offshore wind for a specific country.

The results of this briefing also suggest that **achieving a good balance between protected areas and renewables is possible**, with eight out of the 10 countries that had data available indicating that they were able to designate sufficient space for renewable energy outside of marine protected areas (MPAs). However, it is important to note that the EU is far from delivering on the EU Biodiversity Strategy goal of expanding its network of marine protected areas to cover at least 30% of EU seas by 2030, of which 10% must be strictly protected. According to the European Environment Agency (EEA), MPA coverage in 2021 was only 12.1%,[2] less than 50% of the EU Biodiversity Strategy target.

In light of these findings, Member States must not only focus on the quantity of offshore wind capacity, but on the quality of the projects to be developed. Going forward, their focus must be on minimising impacts on nature, by ensuring the areas designated for renewables do not overlap with sensitive sites, especially those being considered for new MPAs or restoration measures. It is key to minimise the damage caused by human activities to marine ecosystems. To take effective action against the polycrisis, climate and biodiversity goals must go hand in hand – one must not undermine the other.

Furthermore, the speedy deployment of offshore wind requires good cooperation with other maritime sectors, such as fisheries, to avoid conflicts between stakeholders. In this context, an ecosystem-based approach to maritime spatial planning must be enhanced to better understand cumulative impacts of activities at sea and improve transboundary cooperation between Member States. The EU's seas are some of the busiest in the world and failure to ensure harmonious co-use of space can delay projects and make it more difficult to achieve a just, renewables-based economy.

WWF urges policymakers to

- Review current national Maritime Spatial Plans to better integrate the requirements of the Renewable Energy Directive and nature legislation (Nature Restoration Law, Birds and Habitats Directives, among others). Most of these Plans were developed before 2023 and do not address new climate and biodiversity legislation. By revising their Plans using an ecosystem-based approach, which takes into account the capacity of nature to accommodate human pressures, Member States can ensure new climate and environment targets are well aligned with other economic activities, both spatially and temporally. Ensure that countries that have not yet finalised and submitted their national Maritime Spatial Plans do so in line with the MSP Directive requirements and integrate environmental considerations to establish an EU-wide perspective on the upcoming deployment of offshore wind, alongside all other maritime activities, in all sea basins.
- Ensure that offshore wind deployment is kept out of Marine Protected Areas (MPAs) in order to preserve nature in these areas. To achieve this, governments should make full use of the areas already designated in their national Maritime Spatial Plans when mapping Renewables Acceleration Areas (RAAs), and avoid MPAs, Natura 2000 sites, or areas of high biodiversity value and their respective buffer zones.[3]
- Incentivise Member States to make full use of the State Aid guidelines for climate, environmental protection and energy, allowing at least 30% of the evaluation score awarded to offshore wind tenders to be based on non-price criteria, especially environmental and social ones. Applying such criteria will increase protection of marine ecosystems and species, and enhance the involvement of local communities.
- Pursue much faster action to cut energy and resource demand, including through higher and nationally-binding targets in the Energy Efficiency Directive. Without such reductions, the phase out of fossil fuels will take much longer and the level of renewable energy supply needed will be much higher, resulting in more pressure on nature and higher costs for our society.


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1 Northern Seas offshore grids (NSOG), Baltic Energy Market Interconnection Plan offshore grids (BEMIP offshore), South and West offshore grids (SW offshore), Atlantic offshore grids, South and East offshore grid (SE offshore): https://energy.ec.europa.eu/news/member-states-agree-new-ambition-expanding-offshore-renewable-energy-2023-01-19_en

2 European Environment Agency (EEA), 2023, Marine protected areas in Europe's seas. https://www.eea.europa.eu/en/analysis/indicators/marine-protected-areas-in-europes-seas

3 WWF Baltic Ecoregion Programme and Coalition Clean Baltic, 2023, Policy brief: Getting offshore renewable energy expansion right for nature in the Baltic Sea. https://www.wwfbaltic.org/our-work/marine/offshore-renewable-energy

INTRODUCTION

This briefing first looks at the space already allocated by the 10 Member States that have made data available in the European Marine Observation and Data Network (EMODnet) regarding offshore renewable energy deployment. A given nation's offshore wind site designation should be part of their national Maritime Spatial Plans, their non-binding renewable energy pledges for 2030 and 2040, as well as with the Paris Agreement Compatible (PAC) energy scenario data for 2030 and 2040.[4] These countries are: Belgium, Denmark, Estonia, Finland, Germany, Latvia, Netherlands, Poland, Spain and Sweden.

For the remaining 12 coastal Member States who have not uploaded their Maritime Spatial Plan data to EMODnet or have yet to finalise them (Croatia, Greece, Italy), this brief also estimates the space they would need to allocate for offshore wind to meet their 2030 and 2040 pledges.

The goal is to assess whether Member States have set aside enough space at sea, outside of MPAs, to deliver on their offshore targets. Further information on the methodology is available in the Technical Annex.

Among numerous European policies that aim to secure a sustainable balance for shared marine spaces and resources is the EU Maritime Spatial Planning Directive (MSPD, 2014/89/EU). The MSPD was developed to provide an integrated planning and adaptive approach to how the EU and its Member States manage human-led activities in their waters. **Maritime Spatial Planning (MSP)** is a future-oriented process that considers all economic sectors and ecological factors related to a marine area and allocates space, both geographically and temporally, to different activities and people whose livelihoods are tied to our seas for the purpose of ensuring a long-term sustainable balance between people and nature.

The **Paris Agreement Compatible (PAC) scenario** is a piece of energy systems modelling developed by Climate Action Network Europe and the European Environment Board that provides projections on how to align the EU's energy production and consumption with the Paris Agreement's objective of limiting global warming to 1.5°C. It is based on three objectives: a 100% renewable energy system, a near 50% reduction in energy demand, and climate neutrality, all by 2040. For each Member State, PAC scenario data shows the amount of offshore wind energy needed by 2030, 2035 and 2040, although it should be noted that because of the nature of the model and the source data the figures in the PAC scenario may not align in every case with recent real-world data or with what may be possible and desirable, and it does not necessarily represent WWF views on the appropriate level of offshore wind for a specific country.

Importantly: the PAC scenario bases its analysis and figures on a significant decrease in energy demand (halving energy demand by 2040 compared to 2015 levels), which explains why the absolute quantity of power production capacity (GW) of offshore wind farms is relatively low in the PAC scenario. If power demand reduction on the scale projected in the PAC scenario is not achieved, then higher levels of power produced with renewables will be needed, including offshore wind.

The **power density** (or capacity density) of an offshore wind farm is how much energy is produced per km² (MW/km²). Technical-economic issues, regulatory frameworks, and the size of the European Exclusive Economic Zones (EEZs) influence the capacity density, which is therefore different depending on the sea basin and country. In this briefing, we use the European MSP Platform's latest data at a sea basin level for 2030 and 2040 and, when no data is available, we refer to the industry average (5MW/km²).

For more information on MSP, PAC and power density data, see the Technical Annex.

KEY FINDINGS AND WWF ASSESSMENT

The 10 Member States with offshore renewable energy deployment data

- The majority of the 10 Member States for which there is available data have already allocated enough space for offshore wind to achieve their 2030 pledges. However, only four are on track for 2040.
- Looking at the PAC scenario projections, the results are broadly similar to those for the non-binding pledges, as the majority of countries have also allocated enough space to reach the level of offshore wind projected for 2030 and 2040 by the PAC scenario. The exceptions are Belgium for 2030 and 2040, and Germany[5] and the Netherlands for 2040.
- In total, there is more than enough space allocated across the 10 countries for offshore wind deployment to meet the PAC scenario projections for 2030 and 2040. Member States have currently allocated 43,462 km², while the space required under the PAC in these 10 countries is 8,095 km² for 2030 and 19,114 km² for 2040.[6]
- As regards potential impacts on nature, most of the countries have been able to designate space for offshore wind outside of MPAs, except for Belgium and Germany, which have operational wind farms overlapping with protected parts of the North Sea. However, it should be noted that offshore wind farms that overlap with an MPA in both countries are not being considered for repowering in the countries's long-term plan for its EEZ.

5 Results for Germany are based on the 2023 data. While the government is currently updating its development plan for offshore-wind, these have not been finalised at the time of preparing this publication. Further information on Germany is included on page 10.

6 As explained in the box on the left, the PAC scenario relies on halving energy consumption by 2040, which lowers the level of energy capacity needed for 2030 and 2040. If not achieved, more renewable energy will be needed. It should also be noted that because of the nature of the model and the source data the figures in the PAC scenario may not align in every case with recent real-world data or with what may be possible and desirable, and it does not necessarily represent WWF views on the appropriate level of offshore wind for a specific country.

4 More info on the PAC scenario in the box on this page and in the Technical Annex.

Figure 1. Space needed at sea (km2) to achieve the 2030 and 2040 pledges and the 2030 and 2040 PAC scenario projections for the 10 Member States with offshore wind deployment data

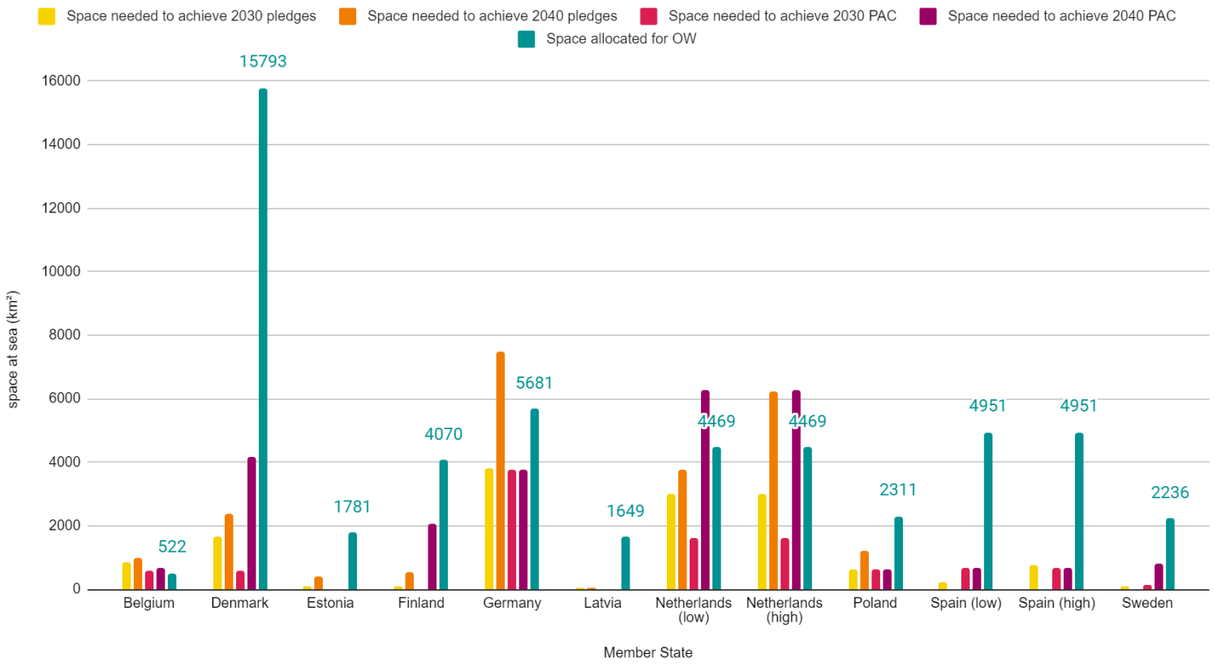

Figure 1 shows the space allocated by the 10 identified Member States (in green), compared to the space needed to achieve their non-binding pledges for 2030 (yellow) and 2040 (orange), as well as the PAC projections for 2030 (pink) and 2040 (purple).

The data for allocated space are retrieved from the EMODnet Human Activities geoportal. For space required by 2030 and 2040, the Member States' pledges were divided by the respective projected power density of the sea basin. The same calculation methodology was applied to the 2030 and 2040 PAC scenario data.

For the Netherlands and Spain, the distinction between the low and high bars refers to the bottom and top of the range of their pledges.

For more information on data used, and caveats concerning interpretation of the PAC scenario, see the box above and the Technical Annex.

Belgium

✕ Pledges for 2030 & 2040: The country has not allocated enough space for offshore wind in its national Maritime Spatial Plan (from 2020) to achieve its 2030 (6,000 MW) and 2040 (8,000 MW) pledges.

✕ PAC for 2030 & 2040: The same result is highlighted by the PAC scenario data for 2030 and 2040, although it indicates that Belgium needs to reach less offshore wind capacity than the country has pledged. This is due to the PAC's projected reduction in energy demand by 2040 and the development of other renewables – principally onshore solar – to meet energy demand.

✕ Offshore wind sites inside Marine Protected Areas: one offshore wind farms is planned inside the MPA of "Vlaamse Banken", adding further pressure on sensitive ecosystems in need of protection. Impacts on marine ecosystems are monitored by the Royal Belgian Institute of Natural Sciences and results show a significant impact on seabird mortality and the distribution of marine mammals.

WWF view: across the 10 countries assessed, Belgium has already designated the largest share of its maritime area to offshore wind (15.1%, see Table 3). Yet, this is not enough to deliver the non-binding offshore wind pledges (24.82% for 2030 and 28.95% for 2040), especially without further affecting protected areas. WWF recommends that Belgium reduce its 2030 and 2040 pledge targets, and explore the deployment of other renewable energy sources that exert less pressure on nature.

Denmark

√ Pledges for 2030 & 2040: Though the power density for Denmark is expected to be lower than the average for the North Sea, results show that Denmark has allocated much more space than needed to achieve its 2030 (13,200 MW) and 2040 (19,000 MW) pledges.

√ PAC for 2030 & 2040: Same findings as above.

WWF view: With one of the largest EEZs in the North Sea, the Danish government aims to develop a renewable energy hub by allocating 30% of marine waters to the deployment of renewables. This entails not only offshore wind but also investments in hydrogen fuel or other types made using Power-to-X technologies or wind power. The regional approach to planning and deploying renewable energy (wind and grids) is one of the Greater North Sea Basin Initiative's goals. If successful, the Initiative can reduce the energy burdens of Member States with smaller EEZs, i.e. countries with larger offshore wind areas can export energy to others in the region, while ensuring regional impacts on nature are minimised.

Estonia

√ Pledges for 2030 & 2040: The country has allocated enough space for offshore wind in its national Maritime Spatial Plan (from 2022) to achieve its 2030 (1,000 MW) and 2040 (3,500 MW) pledges.

√ PAC for 2030 & 2040: Same findings as above.

Finland

√ Pledges for 2030 ✕ not for 2040: The country has allocated enough space for offshore wind in its national Maritime Spatial Plan (from 2020) to achieve its 2030 (1,000 MW) and 2040 (5,000 MW) pledges. However, the 2040 pledge is now outdated and the government is in the process of revising the numbers. WWF is anticipating a significant increase in the 2040 targets. So far, the Finnish government has only offered offshore wind contracts to project developers in Finnish territorial waters; new legislation concerning permitting in the EEZ is being prepared, with the first concessions anticipated by 2030.

√ PAC for 2030 & 2040: Finland has allocated enough space to reach the 2030 (67 MW) and 2040 (18,655 MW) projections. However, both the 2030 and 2040 numbers are outdated and significantly lower than the total MW of projects currently being developed. The total capacity of OWP projects launched by developers significantly exceeds the PAC 2040. The 2040 number does not reflect the view of WWF and the total capacity of OWP projects launched by developers significantly exceeds the PAC 2040 figure.

✕ Maritime Spatial Planning: The current Finnish national Maritime Spatial Plan which is in place until 2030 is not legally binding for offshore wind permitting processes. Offshore wind developers have thus not restricted their projects to the areas designated in the national plan. The Ministry of Environment has initiated a process to revise the national MSP by 2026.

WWF view: Permits for offshore wind farms must only be awarded for projects that occur in areas designated for offshore wind infrastructure in an ecosystem-based national Maritime Spatial

Plan. As with other Member States, offshore wind cannot be deployed in all Finnish waters in order to prevent potential conflicts with the protection of underwater habitats and species. Turbines should be placed in waters between 10-20 metres deep (i.e. avoid shallow waters) and 50 metres deep (maximum depth for fixed-bottom turbines), which would potentially occupy a significant portion of the coastline.

Power transmission cables on the sea bed from offshore wind turbines to the national power grid on land must not be placed within MPAs.

WWF advocates for a step-by-step approach to offshore wind development, with coordinated and continuous monitoring and assessment of the impacts of existing wind farms, in order to prevent negative impacts on species and habitats over a wind park's lifetime.

Germany

√ Pledges for 2030 × not for 2040[7]: The country has allocated enough space for offshore wind in its national Maritime Spatial Plan (from 2021) and Site Development Plan for 2023 to reach its 2030 pledge (30,500 MW), but not for 2040 (60,000 MW).

√ PAC for 2030 & 2040: Germany has allocated enough space to reach the 2030 (30,000 MW) and 2040 projections (30,000 MW).

× Offshore wind sites inside Marine Protected Areas: the wind farm "Butendiek" in the German North Sea has damaged a third of the bird sanctuary located in the Eastern German Bight. Additionally, the government is currently assessing how offshore wind could be expanded within the MPA "Dogger Bank" in line with conservation goals, an extremely sensitive transnational sandbank and migration area in the middle of the North Sea. In 2020, the European Commission pursued Germany for its inadequate implementation of the Natura 2000 network of protected areas. The lack of commitment to stay out of the Dogger Bank when developing offshore wind farms adversely affects Germany's efforts to achieve the EU's strict nature protection goal and the effective management of the country's MPAs.

WWF view: Germany is on track to deliver the PAC scenario, yet political ambitions to develop more offshore wind than needed risk further damaging sensitive marine ecosystems in the Baltic and North Seas, including sensitive areas for seabirds[8]. WWF urges Germany to avoid expanding offshore wind within its MPAs, while an approach to continuously monitor and assess the impacts of existing wind farms on nature should be implemented to help develop offshore wind step-by-step in a strong alliance with nature. This requires improving coordination with neighbouring countries to streamline planning and development processes.

Latvia

√ Pledges for 2030 & 2040: The country has allocated enough space for offshore wind in its MSP (from 2019) to achieve its 2030 and 2040 pledges.

√ PAC for 2030 & 2040: Same findings as above.

The Netherlands

√ Pledge for 2030 × not for 2040: The Netherlands has allocated enough space for offshore wind in its national Maritime Spatial Plan (from 2022) to achieve its 2030 pledge (21,000 MW). However, the country is not on track to reach its 2040 targets (between 3,750 MW and 6,250 MW); depending on the level reached by 2030, it may need to allocate more space at sea.

√ PAC for 2030 × PAC for 2040: The Netherlands has allocated enough space to achieve the level of offshore wind energy capacity indicated by the scenario for 2030 (11,300 MW), but will need to allocate more space to meet the level projected for 2040 (50,160 MW).

WWF view: So far, The Netherlands has focused on delivering the North Sea Agreement, which is an agreement between the Dutch government and stakeholders through 2030 on how to develop wind energy and in balance with nature protection in the long-term. According to WWF analysis, the country would need to allocate more space to achieve both its 2040 pledge and reach the 2040 PAC projection. WWF recommends stakeholders account for this difference by revising the North Sea Programme 2022-2027, while keeping space allocated for offshore wind farms out of protected areas.

Poland

√ Pledges for 2030 & 2040: The country has allocated enough space for offshore wind in its national Maritime Spatial Plan (from 2021) to achieve its 2030 and 2040 pledges.

√ PAC for 2030 & 2040: Same findings as above.

Spain

√ Pledge for 2030: Spain has allocated enough space for offshore wind in its MSP (from 2023) to achieve its 2030 pledge.

× Pledge for 2040: Spain has no pledge for 2040.

√ PAC for 2030 & 2040: Spain has allocated enough space to reach the 2030 (2,745 MW) and 2040 (2,745 MW) projections.

WWF view: While areas for the development of offshore wind have been established by the Government in its maritime spatial plan, the regulation that enables the development of new projects is still pending. This means that no offshore projects are currently being processed. If the regulation keeps being delayed, Spain risks not achieving its 2030 pledges. Regarding the regulation, WWF asks for an individual assessment of each designated area, with a staggered opening depending on their level of environmental and social impact. Moreover, while the maritime spatial plan has been subject to a Strategic Environmental Assessment (SEA), WWF asks for a specific SEA in each of the designated areas, as the scale and the elements of the current SEA cannot ensure the avoidance of higher environmental impacts in such spaces.

Furthermore, due to the lack of information on the potential impacts of offshore wind energy in Spanish waters (due to the lack of commercial projects), and the fairly high availability of onshore wind and solar resources, WWF asks for stricter non-price criteria when auctioning new offshore wind projects (50% for environmental criteria and 25% for social criteria). Finally, the Spanish Government has clearly positioned itself to play a key role in the future renewable hydrogen scenario within the European context, looking to become a producer and net exporter of green hydrogen in the EU. While no specific link has yet been made, the current designation of space for offshore wind does not exclude the development of large-scale offshore wind projects that could be specifically dedicated to the production of renewable hydrogen.

Sweden

√ Pledge for 2030: Sweden has allocated enough space for offshore wind in its national Maritime Spatial Plan (from 2022) to achieve its 2030 pledge (700 MW).

× Pledge for 2040: Sweden has no pledge for 2040.

√ PAC for 2030 & 2040: Sweden has allocated enough space to reach the 2030 (1,201 MW) and 2040 (7,160 MW) projections. However, both the 2030 and 2040 numbers are outdated and significantly lower than the total MW of projects currently being developed. According to the Swedish Wind Energy Association 2,600 MW are under construction for the period 2024-2026 and 100,000 MW are being developed.

WWF view: The Swedish maritime spatial plans are going through changes to allow for more space for the development of offshore wind. The goal is to increase the energy production from an estimated 30-40 TWh/year to 120 TWh/year.

At the moment the Swedish Agency of Marine- and Water Management (SwAM) has proposed three scenarios for energy areas for the development of offshore wind: scenario 1 has assigned 42 energy areas in total. SwAM has pointed out that this represents a full scale development of the Swedish economic zone (SEZ) and is a very unlikely scenario. Scenario 2 has 20 energy areas assigned and scenario 3 has 14 energy areas assigned. As part of the public consultation on the different scenarios, WWF Sweden expressed its support for scenario 3 as it will have the least negative effects on nature and biodiversity, with the exception of two energy areas that should be excluded considering the risk for ringed seals.

The SwAM will revise the proposal for the new MSPs and deliver it to the government by December 2024 with the new plans expected to be adopted by the government during the first half of 2025.

7 The update of the development plan for offshore wind is currently being negotiated in Germany. The August 2024 version designates enough space for fulfilling the 70 GW target. Further, the 2035 target (initially 40GW) is expected to increase to 50 GW. https://www.bsh.de/DE/THEMEN/Offshore/Meeresfachplanung/Laufende_Fortschreibung_Flaechenentwicklungsplan/Anlagen/Downloads_Entwurf_FEP/Entwurf_FEP.pdf?__blob=publicationFile&v=3

8 NABU, 2024, Research project NaMaRo seeks solutions for sustainable spatial planning of our seas. https://www.nabu.de/natur-und-landschaft/meere/namaro-projekt.html

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The total space for offshore wind deployment in the 22 coastal Member States, including the 12 Member States with no offshore renewable energy deployment data

- The 10 Member States with data available on their offshore deployment have greater offshore wind capacities and are on track to develop more wind farms by 2040 than the 12 countries without this data. When looking at which nations have data available, these findings make sense, since the shallow waters of the North and Baltic Seas favour the current technology of bottom-fixed turbines while others might look at other renewable energy sources.
- The total space needed in the EU for all Member States to achieve their voluntary 2030 and 2040 pledges (around 16,000 km² and around 29,000 km² respectively) is well below the space identified by the 10 countries for which data are available (43,462 km²). In other words, countries have designated much more space for offshore wind than what is required to achieve the 2030 and 2040 pledges. Cooperation between Member States is now key to ensure renewable energy will be fairly distributed from countries who produce more than needed at the national level (e.g. Denmark) to those who are not able to produce more due to small marine areas (e.g. Belgium).
- When considering all 22 coastal Member States (excluding the Portuguese and French Outermost Regions, where offshore wind is not currently planned), delivering the 2030 pledges would require between 0.48% and 0.5% of continental EU waters, and for 2040 between 0.79% and 0.89%. However, the ability to deploy offshore wind depends on what technology is currently available (i.e. fixed-bottom versus floating turbines) and accessible (i.e. cost). As fixed-bottom turbine technology is more developed than floating, but can only be installed up to 50 metres deep, deployment is currently more favourable to the North and Baltic Seas topography.

Figure 2. Projections of the space required at sea (km2) to achieve the 2030 and 2040 pledges for the 12 coastal Member States without offshore wind deployment data

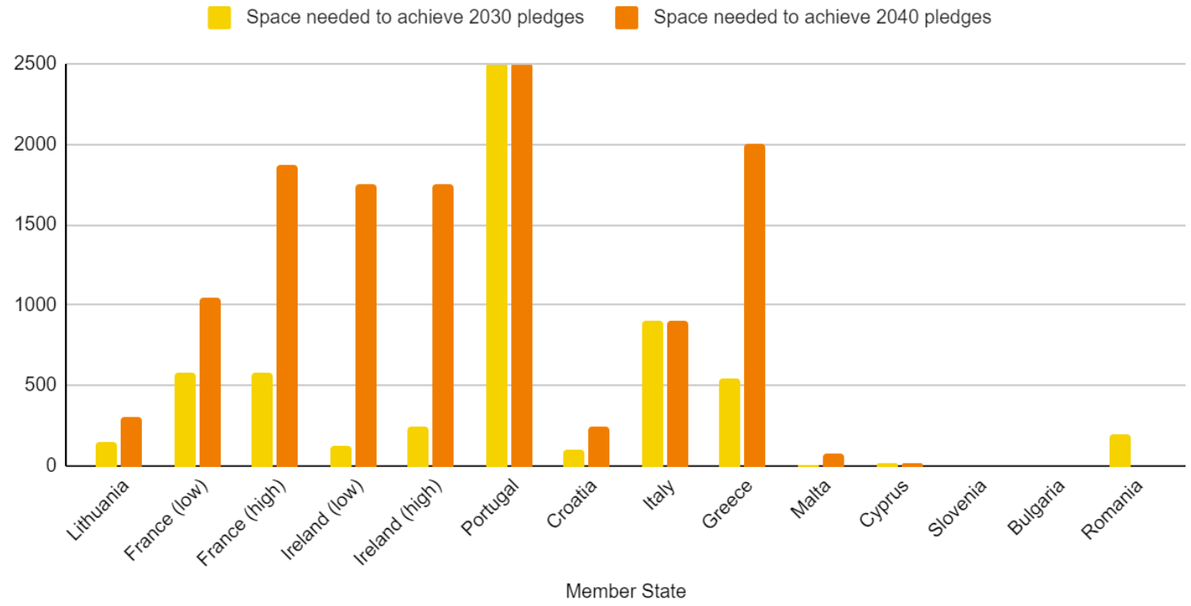


Figure 2 provides an estimate of the space required for the remaining 12 coastal Member States that have not uploaded their data in the EU's data platform to achieve their non-binding pledges for 2030 and 2040. These projections were calculated by dividing the 2030 and 2040 pledges by the power density of the countries' sea basin.

For France and Ireland, the distinction between the low and high bars refer to the bottom and top of the range of their voluntary pledges. In the case of France, the national Maritime Spatial Plan defines large zones in which smaller areas for offshore wind farm development will be designated. These large zones overlap with 80% of the Natura 2000 site "Grand Dauphin du Golfe du Lion" and 50% of the Natura 2000 site "Camargue", which are both in the Mediterranean Sea. The overlap raises concerns, as Natura 2000 sites are important corridors for marine mammals and birds.

For Slovenia and Bulgaria, their pledges are 0 for 2030 and 2040, resulting in no space having been designated. In the case of Slovenia, the current national Maritime Spatial Plan points to severe challenges to installing offshore wind farms due to the country's limited EEZ and space required by other maritime sectors, and so has only pledged 150 MW by 2030 – 16% of what is necessary to deliver the PAC scenario.

For Romania, the country had no 2040 pledge at the time of preparing this publication, which is the reason there is no red bar in Figure 2.

For Portugal and Italy, the space needed is the same for both 2030 and 2040 as, at the time of preparing this document, their 2030 and 2040 pledges are identical. However, the Portuguese government is reviewing the non-binding targets and plans to lower the 2030 target to 2 GW. At the time of publication, this is being publicly discussed but not yet approved.

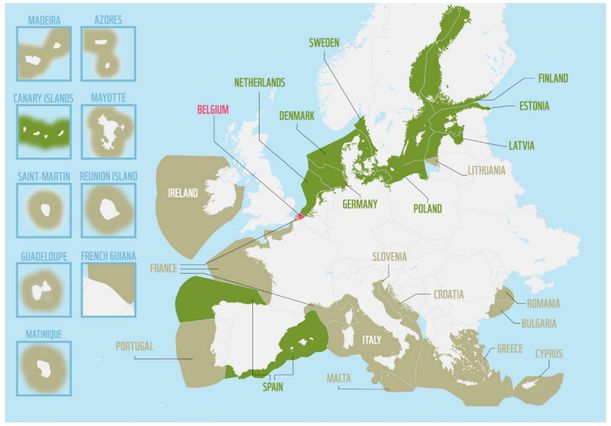
For more information on data used, see the Technical Annex.

Figure 3. Projections of the total space needed in EU seas to achieve all Member States 2030 and 2040 non-binding pledges

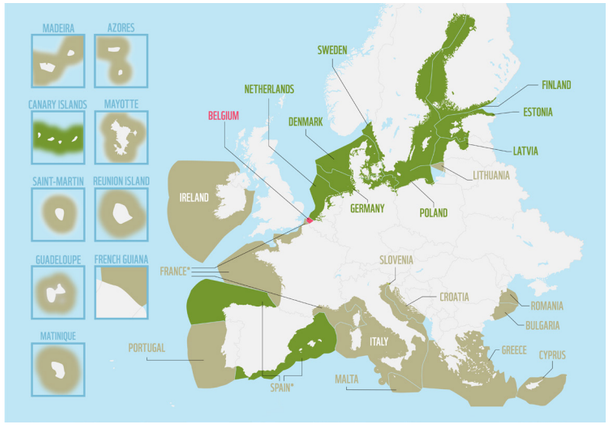
Figure 3 shows the total space needed in EU seas to deliver the non-binding pledges of the 22 coastal Member States. The EU total is the sum of the estimated space for the 10 countries with data available (detailed in Figure 1) and the estimated space for the 12 countries without data (detailed in Figure 2).

To compare the total EU space needed against what has already been allocated, it would be necessary for the 12 countries without data to upload their national Maritime Spatial Plans to EMODnet. Without this data, it is only possible to calculate the space required based on the non-binding pledges and PAC scenarios.

Have EU Member States designated enough space for offshore renewable energy by 2030?

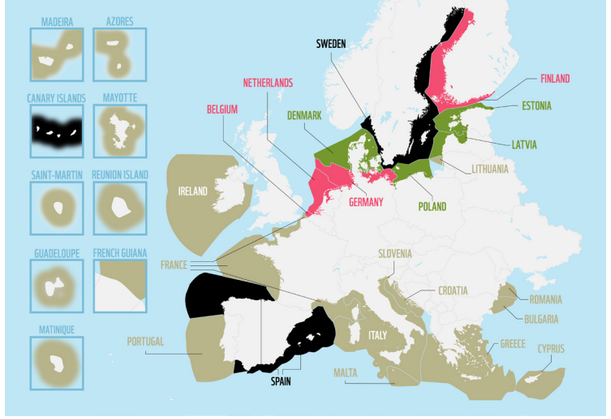


Map 1: Member States non-binding pledges for 2030

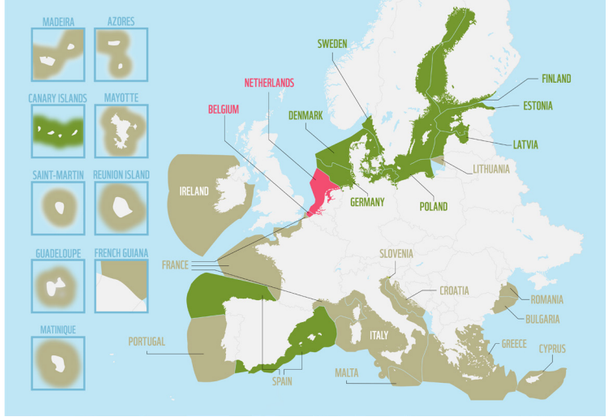


Map 2: Paris Agreement Compatible Scenario for 2030

Have EU Member States designated enough space for offshore renewable energy by 2040?



Map 3: Member States non-binding pledges for 2040



Map 4: Paris Agreement Compatible Scenario for 2040

Keys

Enough space dedicated

Not enough space dedicated

No data

No pledge for 2040

WWF'S MISSION IS TO STOP THE DEGRADATION OF THE PLANET'S NATURAL ENVIRONMENT AND TO BUILD A FUTURE IN WHICH PEOPLE LIVE IN HARMONY WITH NATURE

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