

# Offshore Wind in EU Maritime Spatial Plans

## HIGHLIGHTS

- Member States allocated, through their Maritime Spatial Plans, approximately **52,000 sq.km for offshore wind** development, equivalent to more than **220 GW**. But tender timelines are still unclear in most states.
- Most of the allocated areas have good wind resources and low interference with other sectors such as nature protection, defence, and fishing. But not much has been done to promote coexistence.
- These areas will **allow most Member States to reach their 2030 targets or ambitions**, but country-level measures (policies, financing options, supply chain development) must be set in place as soon as possible.

## Introduction

In July 2014 the European Parliament and Council adopted the Directive 2014/89/EU establishing a framework for Maritime Spatial Planning (MSP). This is a tool which Member States use to organise and optimise their sea space, in line with their national objectives.

The EU MSP Directive required coastal Member States to submit their Maritime Spatial Plans to the European Commission by 31 March 2021.

These plans contain information on **offshore wind development areas in each EEZ** and can give an indication of **how serious MS are about offshore wind**. **WindEurope has assessed the MSPs** of Belgium, Denmark, Estonia, Finland, France, Germany, Ireland, Latvia, Lithuania, the Netherlands, Poland, and Sweden, and the drafts of Greece, Italy, Spain, and Bulgaria. **This briefing lays out the main outcome and findings of the assessment**. The full set of data is available to WindEurope's members.

## Main results

Altogether, the 16 assessed countries allocated a total of **52,000 km<sup>2</sup> for offshore wind**, equivalent to approximately **220 GW of offshore wind capacity**<sup>1</sup>.

<sup>1</sup> When area or equivalent capacity were not officially available, WindEurope applied the Rule of Thumb of 5 MW / sq.km.

Total area available	Equivalent capacity	Percentage of sea
52,000 km <sup>2</sup>	220 GW	2.9%

Cumulatively these areas take up less than 3% of the total sea area of the countries under review, ranging from 15% in Belgium and Germany, to 12% in Poland, to less than 5% in Estonia, Finland, France, Ireland, Latvia, Sweden, and Spain.

All Member States (aside from Greece, Italy, and Portugal) allocated **enough areas to reach their current 2030 targets**. Estonia, Finland, Latvia, and Sweden allocated areas well in excess of their 2030 targets. With the right policies in place, we can expect these countries to raise their 2030 ambitions soon, as the space is now secure. **Most Member States (9/16 assessed) have assigned areas coherent or in line with WindEurope's 2050 scenario**.

While not mentioned in the MSPs, it is indicated that wind resources in them could deliver mid to very low LCOE for projects – apart from in Spain, where potential will be reduced due to scarce conditions in the areas.

**Almost all areas avoid overlapping with defence or Maritime Protected Areas (MPAs).** But they are often in close proximity. However, most MSPs still do not allocate the 30% of Maritime Protected Areas called for in the EC's Biodiversity Strategy.

### Countries overview

**Belgium's** MSP has earmarked a total of 519 km<sup>2</sup> reserved for offshore wind (15% of its EEZ), which translates into a potential 5.7 GW. 238 km<sup>2</sup> (2.2 GW) are already fully developed. Out of the 281 km<sup>2</sup> of the new concession zone, around half will be on a protected area, with consent subject to Appropriate Assessment. The Belgian Offshore Platform signed an MoU with local NGOs to develop the new concession zone – safeguarding and possibly improving the conservation objectives of the area. The risk of conflict with fisheries is small, with sustainable aquaculture and passive fishing accounted for in the new wind farms. No clash is expected with defence due to the strong relationship with the Belgian Navy.

**Denmark** allocated 11,000 km<sup>2</sup> (10% of its EEZ), which is enough to reach the current 2050 target of 42.3 GW (2.3 GW operational + 35 GW in the North Sea + 5 GW in the Baltic Sea). There is no overlap with current Maritime Protected Areas, but some impacts might arise with overwintering and resting sea birds. According to the SEA, there may be very low potential impacts on bat populations and no negative impacts expected for marine mammals. There is no overlap between offshore wind and high-value fishing areas, but there is overlap with one NATO training area.

**Estonia** allocated 1,850 km<sup>2</sup> (5% of its EEZ) to develop 9 GW of offshore wind. The areas have good conditions: low icing levels and good depth, wind speeds, and seabed. There is no overlap with defence and nature protection areas, but the latter is adjacent to one of the two development areas. Conflicts with shipping might arise as part of the concession zone overlap with national shipping routes.

**Finland** allocated 3,500 km<sup>2</sup> (4.3% of its EEZ) for building 15.7 GW. The MSP is not legally binding, and feeds into the “regional plan”, developed by the various coastal municipalities. All areas are at least 10 km from the coast. There is no overlap or even any proximity to current MPAs, but defence requirements may limit energy generation potential in all planning areas.

In **France** the MSP is made up of four sea-basin strategies (“Documents Stratégiques de Façade – DSF”). Macro-areas for offshore wind have been pre-selected and could allow room for between 40 and 60 GW, covering 8,000 – 12,000 km<sup>2</sup> (2.3 – 3.5 % of the EEZ, at 5 MW / km<sup>2</sup>). The €50 million announced in June 2021 for environmental marine research on marine life, habitats and cumulative impacts of offshore wind will be used to identify the best zone for offshore wind projects. But regardless of the final location of wind farms, tensions with fishermen in France are high, compounded by the impacts of Brexit.

**Germany** allocated around 8,400 km<sup>2</sup> for offshore wind (15% of its EEZ), out of which 2,000 km<sup>2</sup> are priority areas (20 to 23 GW) and 6,400 km<sup>2</sup> reserve areas (40 GW). BSH is currently investigating an extra 5-6 GW in the Dogger Bank. The total area should allow Germany to reach its current 2050 target of 70 GW. Priority and reserve areas do not overlap with MPAs, but two priority and three reserve areas will be adjacent to a nature conservation and the Harbor Porpoise's reserve areas, respectively. Transit through wind farms and static fishing inside Safety Zones is allowed, and research led by BSH will take place in “conditional reserve areas”. Asset sharing with the Ministry of Defence (MoD) is encouraged.

**Ireland** allocated enough areas to reach its previous 5 GW target by 2030 (now 7 GW since August 2022) in two phases: 2 GW by 2028 of “relevant projects” and 3 GW by 2030 under investigation. This will account for about 1,000 km<sup>2</sup> (calculated for 5 MW/km<sup>2</sup>), which is only 0.2% of the Irish EEZ. There is no overlap or proximity to existing Maritime Protected Areas, but

potential issues might arise for phase two projects with fishing areas and the Haulbowline Naval Base.

**Latvia** allocated around 300 km<sup>2</sup> (around 1% of its EEZ) in 5 areas of 60 km<sup>2</sup> each. Each area will host 800 MW for a total of 4 GW, but it is not clear when these will be developed. All areas are at least 8 km from shore, with a wind speed of at least 8 m/s at 100 m. There is no overlap with current Maritime Protected Areas but there is some proximity to current “investigation areas of natural value”. The [REEF](#) project is looking at which areas could be protected in future. Defence has imposed a height limit of 100m for wind turbines, but this could be addressed by purchasing a radar in line with the MoD requirements.

**Lithuania** allocated 644 km<sup>2</sup> (9.4% of its EEZ) for offshore wind. According to Government’s sources this could deliver 2.4 GW, but it could potentially be as high as 3.3 GW. The Government is currently carrying out the EIA for the first 700 MW (centralised pre-development system). Wind farm developers will pay a fee of €18/kW for radar compensation measures to the Ministry of Defence.

In **the Netherlands**, the current plan sets out a total of 3,400 km<sup>2</sup> (5.9% of the EEZ) to be developed by 2030. 1,800 km<sup>2</sup> for 10.8 GW (at 6 MW/km<sup>2</sup>) were already assigned in the previous plan, while an additional 1,600 km<sup>2</sup> for 16 GW (at 10 MW/km<sup>2</sup>) were included in the additional draft. These areas are more than enough to reach the current 22.2 GW target by 2030. The Government is also exploring an extended area of 3,400 km<sup>2</sup> for an extra 34 GW beyond 2030 (at 10 MW/km<sup>2</sup>). Nature conservation areas have been avoided, but ecological complexity and requirements that might arise could be a challenge. A [socio-economic assessment](#) has been carried out to calculate compensation measures for fishermen (for the 16 GW new search areas estimated at around 2.5 m€/year). Options for relocating and multiple use of military exercise zones are set to be explored.

**Poland** allocated 3,600 km<sup>2</sup> (12% of the EEZ) of OW areas for a total of around 17.2 GW, out of which 8.4

GW are already under administrative procedure in 9 projects. The conditions in the Polish maritime areas are favourable from the point of view of depth and wind conditions.

**Spain** is finalising the allocation of around 8,000 km<sup>2</sup> (0.7% of the EEZ), which would allow them to build 24 GW (at 3 MW/km<sup>2</sup> as used by the authority). An approximate spread would be: 2.2 GW in the Canary Islands, 13.4 GW in the Atlantic Area, 3.5 GW in the Balearic Islands, and 4.8 GW in the Estrecho and Alborán area. But many of these areas (around 3,000 km<sup>2</sup> or 11 GW) do not have great potential (with low wind speeds, depths greater than 500 m, and conflicts with other sectors). Negotiations are ongoing with NGOs, fishery associations, and the Ministry of Defence. Spain is finalising the integration of the public consultation process and is looking at specific high potential and priority-use areas. This will be the basis for finishing the SEA. The plan should be adopted before the end of 2022.

**Sweden** allocated areas for 20-30 TWh of offshore wind production and another 90 TWh are currently under investigation. With an assumed capacity factor of 45% this means 6-7 GW under the current plan (1,400 km<sup>2</sup> at 5 MW/km<sup>2</sup> = 1% of the EEZ) and up to 22 GW under investigation (4,400 km<sup>2</sup> at 5 MW/km<sup>2</sup> = 3% of the EEZ). However, the fully decentralised system is not effective in solving conflicts, and issues might arise when developing these areas, especially with defence.

**Other countries that still have not submitted their MSP include Italy, Greece, and Bulgaria.**

**Italy** started the SEA for the MSP in February 2022, with stakeholder and cross-border consultations. Final approval from the Technical Committee is currently pending and the plan should be submitted by the end of the year. Italy will opt for a fully decentralised approach and no areas defined for OW are expected in the plan.

In **Greece**, the Ministerial Decision for delineating maritime spatial units (Article 6 (4) Law 4546/2018) was issued at the end of June 2022 and the areas for OW are currently under investigation. It should outline at least 2 GW by 2030 setting out wide envelop areas for developers to start technical studies.

**Bulgaria** is developing its OW framework and has started zoning OW priority areas for further state investigation. Non-priority areas should also be made available for developer-led projects.

### Trends and learnings

The general trend seems to be setting out a timescale of eight years in the revised MSPs, extending up to 2030. This is in line with the requirements laid down in the MSP Directive. But Member States can review their plans beforehand, as is expected for certain MS including Denmark, Belgium, Germany, and the Netherlands.

In general, MSPs have reinforced “zoning” of the EEZ, which benefits offshore wind and the interests of other fixed activities, including nature protection. Zoning means centralising space allocation, which for offshore wind usually means Government tenders. This is the most widely applied model in the EU today, but the need to ramp up deployment might favour the “greenfield” (or “open door”) approach, or a combination of both. Some countries (e.g., Estonia) have also started allocating areas for open-door projects in their MSP. Germany will allow both options, opening auctions for pre-developed and non-pre-developed areas, under different tender setups. Other countries might follow this example as a way of boosting deployment. In general, tendering means a greater role for Governments and mature markets tend to take on more responsibilities for site pre-development.

**By and large MSPs do not go into detail on how and when these areas will be developed.** Some Member States have set aside a large number of areas for offshore wind, but still do not have the right national frameworks in place, including a clear tenders’

timeline. In fact, securing the space at sea is not enough, especially for emerging markets. Furthermore, having a clear pipeline of projects not only helps the supply chain, but grid planning as well, with the TSOs now in the process of writing the Offshore Network Development Plans (ONDP). **It is vital that MS ensure a favourable regulatory framework for the expansion of offshore wind in their countries.**

The MSP process has fostered engagement, internally – between ministries, and externally - with maritime stakeholders, and across borders – with neighbouring countries. The wind industry National Associations have always been involved in the process, as has been the case with all other maritime stakeholders in most States. Consultation meetings are a regular outlet for strengthening this sort of engagement across all countries. They are organised either to cover geographical areas (e.g., Estonia, Finland, Latvia, Sweden) and/or with a thematic frame of reference (e.g., Germany, Latvia, Finland).

Finally, **multiple uses for OW farms are still not properly enshrined in most of the MSPs**, except for Belgium, Germany, and the Netherlands. The latter gives the clearest details on how it could happen in practice, from background assessments of feasible multi-use options to a clear permitting guidance.

### Conclusions

Developing an MSP is an extensive and resource-demanding process, which takes years and which most MS have had to do for the first time. It is driven by national policies, targets, and the political situation in each country.

**Most MS were able to allocate enough areas to reach their OW targets, at least by 2030.** The space secured in this first round of an MSP is relatively free of conflicts with other sectors, but not much has been done yet to allow co-use of OW farm areas. This is an important step to boosting the efficiency of how to use resources at sea and MS must make more of an effort to explore this option.

But securing space is just the first step. **Member States should aim to translate all these areas into clear targets in the NECP revision which is due to come up next year.** Once the targets are legally binding, Member States must make sure that the industry will be able to carry out these projects. This will require **laying out a clear tender timeline and strengthen investment in the supply chain**, e.g., by avoiding negative bidding.

International guidance from European institutions and sectorial organisations, including NGOs, will still be needed for key aspects such as environmental and socio-economic assessments, stakeholder engagement, data collection, and cross-border cooperation. And all this should build on the experience of the first MSP round. Most Member States are on track so far, according to the European Commission<sup>2</sup>, but there is still room for improvement.

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<sup>2</sup> "Outlining the progress made in implementing directive 2014/89/EU establishing a Framework for MSP", May 2022