EXECUTIVE SUMMARY

European Parliament

Research for PECH Committee – Impact of the use of offshore wind and other marine renewables on European fisheries

KEY FINDINGS

- The **exploitation of offshore renewable (OR) resources varies greatly** in size and capacity across the different European sea basins, whereby the spatial expansion until 2025 suggests a **sharp increase of spatial conflict potential** in the North Sea, Baltic Sea, and Mediterranean over the next five years.
- The current and future cumulative OR development affects mostly **trawling fleets** targeting mixed demersal species and crustaceans, whereas the composition of fishing effort varied greatly across fleets at individual planning sites.
- European-wide **standardised monitoring programmes** would provide currently unavailable ecological and socio-economic data (i.e. indirect **costs of lost fishing opportunities)**, which are needed to assess the general cumulative **ecological and socio-economic effects** of OR expansions.
- **An integrative framework** is proposed to **clarify** and **mitigate** the **effects of OR** on **fisheries** (e.g. by creating transparent **guidelines on the expansion of OR,** early **stakeholder consultation**, the involvement of **independent third parties** or **compensation payments**), and to facilitate **best practice guidance for marine spatial planning** and the co-operation among marine users.

Background

This study aims to **provide an overview of the general impacts** of the **development** of **offshore renewables** (OR) **on fisheries** in European sea basins. Furthermore, it highlights **pathways for possible co-existence solutions** for both sectors, a description of **good practice examples** and lessons learnt, **research gaps**, and **policy recommendations**.

The present document is the executive summary of the study on Impact of the use of offshore wind and other marine renewables on European fisheries. The full study, which is available in English can be downloaded at: https://bit.ly/33OC3nl

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The research focusses on an **in-depth spatial overlap analysis** between the present-day **fishing effort by fleet and the current and future spatial expansion of OR** in European seas based on Automatic Identification System (AIS) and Vessel Monitoring System (VMS) data. Further, we **defined the concepts of co-existence, co-location and co-operation,** and subsequently synthesised the lessons learnt from representative cases from the UK, Denmark, Belgium, Germany, and the Netherlands. A standardised literature review allowed us to **summarise the current knowledge on the impacts of OR on fisheries** and to **identify respective knowledge gaps**.

This study has been prepared during the period June to August 2020 by the Thünen Institute of Sea Fisheries, Germany, based on desk research consisting of a compilation and analysis of existing data, and a literature review.

Impact of offshore renewables on European fisheries

The **proliferation of OR**, such as offshore wind farms (OWF), is a key pillar in the global transition to a **carbon-free power sector**. The expansion of OR varies greatly across the European seas, whereby Northern European countries such as the UK, Germany, Denmark, Belgium, the Netherlands, and Sweden currently have the highest numbers of installed OWF. This **spatial expansion** is accompanied by an **increasing conflict potential** with other marine sectors, such as fisheries. In Europe, **marine spatial planning** (MSP) **allocates multiple human activities** at sea, such as OR development or shipping, but often falls short in contributing to the adaptive capacity of fisheries.

A spatio-temporal overlap analysis of OR development and fishing activities of European fleets suggests a **sharp increase of spatial conflict potential** in the North Sea, Baltic Sea, and Mediterranean on a mid-term perspective (until 2025). For instance, in the North Sea, the spatial overlap in terms of absolute hours fished could more than double by 2025. In contrast, the conflict potential due to OR expansions in the Atlantic and Celtic Sea regions will remain low at mid-term, but is expected to **increase substantially** at the long-term (after 2025). In the Baltic, Celtic, and North Sea, OR expansion will affect mostly fishing fleets that deploy trawl gears and target crustaceans (**Figure 1**). Furthermore, the results show a **great variation of fishing effort per fleet** and OR **across years**, hence highlighting the need for **local and regional assessments** based on standardised data.

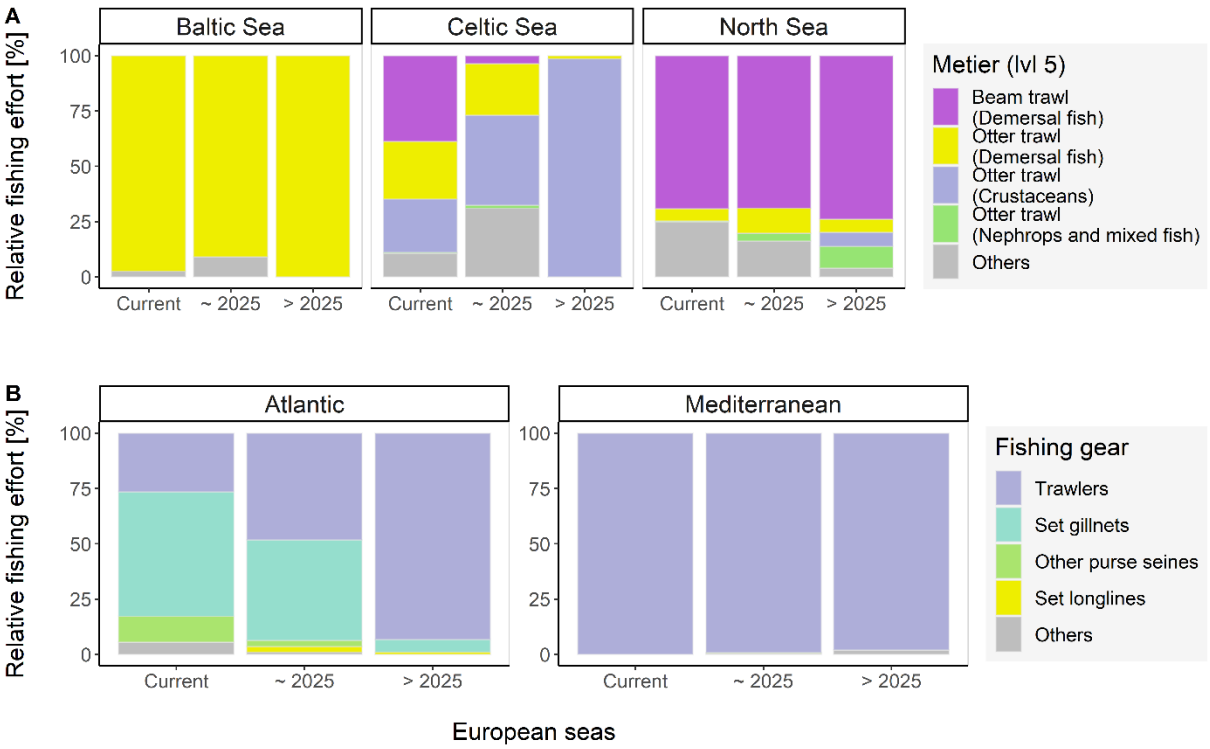
Restricting fishing activities in a larger area will likely lead to the **reallocation of fishing activities** including associated industries and logistics. **Economic impact assessments** for the effects of OR on fisheries need to address **direct and indirect costs** of the loss of fishing opportunities such as the **effects on the local communities and onshore economic activities**, but these are hampered by the **lack of available and harmonised socio-economic data**. While spatial data on fishing activities become increasingly available, a **European-wide standardised research** and **monitoring strategy** with respect to OR expansion and its socio-ecological effects is missing.

Good practice in co-existence solutions

The concept of **co-existence** refers to two or more activities (e.g. fishing activities and OR) **existing at the same time and/or in the same place**, while **co-location** describes the fact that at least two activities are **actively managed together** while sharing space at sea. **Co-operation** reflects an interaction between two or more activities, each **benefitting from that relationship**, and leading to a growth for both. The implementation of co-location or co-existence solutions depends on site-specific characteristics and prevailing **integrated management approaches, such as MSP**. From

existing case studies in the UK, Denmark, Belgium, the Netherlands, and Germany a few measures emerged that may support the **mitigation of spatial use conflicts**. Those comprise 1) early **stakeholder consultation** to detect conflict potential at an early stage and acknowledge the importance of all actors; 2) facilitation of negotiation processes by **independent third parties** and the **creation of guidelines for the expansion of OR**; 3) **compensation payments** for the disturbance and the associated loss of income or additional expenditures: all three aiming at contributing to **a reduction of the impact**. The co-location of OR with other uses can reduce the impact potential on other marine uses, strengthen the relationship of the sectors of concern, and even enable beneficial co-operation between them.

Figure 1: Relative proportions of total fishing effort of the main fishing fleets overlapping with the areas of the current, mid-term (~ 2025), and long-term (> 2026) scenarios of offshore renewable installations across European sea basins



Source: Author based on data provided by 4C Offshore Ltd. and EMODnet for the offshore renewables; and data provided by (A) OSPAR (the Convention for the Protection of the Marine Environment of the North-East Atlantic) and HELCOM (Helsinki Commission for the protection of the Baltic Sea), and the German Federal Office for Agriculture and Food (BLE) and (B) Global Fishing Watch (GFW) for fisheries; the metier levels (lvl) are provided by European Commission 2008a

Note: The metier level represents a group of fishing operations targeting a specific assemblage of species, using a specific gear, during a precise period of the year and/or within the specific area

Key knowledge gaps to inform integrated management

Existing knowledge on the impact of OR on fisheries is focused mainly on **ecological and environmental impacts**. The environmental effects of future expansions of OR still is in its infancy. We identified a **clear gap of economic and socio-cultural impact assessments** for the impact of OR expansion on fisheries. Overall, **more research is needed** to assess potential impacts of the development of OR, especially OWF, on the fishing sector, local communities and onshore economic activities.

Recommendations

Based on our analyses we recommend:

- To **promote standardised monitoring programmes** and the **harmonisation of fishing data, needed** to perform cumulative ecological and socio-economic environmental impact assessment of the expansion of marine energy;
- To **enable more research to understand the effects of offshore renewable installations** on the fishing sector, local communities and onshore economic activities to provide guidance for marine spatial planning to plan with fisheries and support their adaptive capacities;
- To **develop best practice guidance for marine spatial planning on the implementation of mitigation measures** to lower the conflict potential between fisheries and offshore renewable development and to promote co-operation between marine uses.

Further information

This executive summary is available in the following languages: English, French, German, Italian and Spanish. The study, which is available in English, and the summaries can be downloaded at: http://bit.ly/https://bit.ly/33OC3nl

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