ICES Request Form

Grey cells to be filled in by ICES

Request from	European Commission, DG MARE, Unit A2
Request announced	
Request received	
Answer deadline client	Date for ICES to make an offer (usually 4-6 weeks after announcement)
Request code (client)	**24_06 :ORE**
Request code (ICES)	
Request	**Socio-economic impacts of offshore renewable energy (ORE) on fisheries and methodologies to model (cumulative) impacts in the Celtic Sea, Greater North Sea and Baltic Sea (ICES ecoregions)**

Request to ICES:

The main objective of this request is to understand better the socio-economic impacts of fast large-scale ORE developments on the fisheries sector.

The advice should concentrate on bottom-fixed offshore wind devices but evidence from floating wind and ocean energy (tidal, wave, etc.) can be considered where necessary.
The work will consist mainly of reviewing existing literature, but also of building recommendations and testing tools for the modelling of cumulative impacts.

Timeline: 1 year, with a possibility to extend, based on the findings and recommendations for further research that will be provided in the framework of this request.

Geographic coverage: Celtic Sea, Greater North Sea and Baltic Sea (ICES ecoregions). The resolution can be discussed once point a (see below) will be completed.

Meetings to discuss progress and next steps with DG MARE will occur minimum every 3 months, at the initiative of ICES.

Concretely, ICES is requested to:

a) Assess data and resources available for the analysis of the economic[1] and social[2] impacts of ORE developments on the fisheries sector. On that basis:

[1] Focusing on economic impacts on fishers

[2] Identify priority impacts, but focus the assessment on employment of fishers

b) Summarise the known and projected economic and social impacts of existing and planned offshore renewable developments (on fisheries, at metier and fleet levels). Trade-offs between negative economic impacts on fisheries and positive economic impacts of the ORE sector should be considered.;
c) Describe sources of information available, methods that may be applied, and further data and information required, to address the economic and social impacts of ORE on fishers.
d) Summarise the known ecological impacts of ORE developments and their intensity (severe, medium, limited, unknown) on main commercial fish species[3] for the areas listed above and at population levels (positive and negative impacts) looking at the different phases of ORE development (survey, construction, operation, decommissioning). A specific case study on the effects on recruitment of western Baltic herring and of the effects on harbour porpoises should be developed.
e) Provide recommendations for next steps to define methodologies to model cumulative impacts of offshore wind on commercial fisheries (temporary, permanent) and the possibility to adopt mitigation measures
f) Provide a review, based on the most recent literature, to describe how changes on hydrodynamic conditions produced by ORE may change the food availability to filter-feeders and influence phytoplankton primary production;
g) Provide a review, based on the most recent literature, of the ways artificial structures could influence the colonization of new areas by species, both indigenous and non-indigenous species. Based on data available for other structures (e.g. oil & gas), also from other locations (e.g. US), extrapolate how this colonization will affect ORE developments.
h) Provide a review, based on the most recent literature, of the ways in which pelagic species (especially commercial fish species) may react to dynamic cables suspended in the water column (floating wind);
i) List options for mitigation measures, good practices, and spatial planning for ORE developments and assess their strengths, weaknesses, implications and uncertainties. List priorities for research and monitoring related to these options.

Background

Renewable energy produced offshore from wind, waves, tides and the sun is expected to make a key contribution to the EU's climate neutrality target and reduce dependency on imported fossil fuels. The **EU strategy on offshore renewable energy** [4]sets the objective for 2030 of at least 60 GW of wind and 1 GW of ocean energy capacity. By 2050, the targets are 300 GW and 40 GW respectively by 2050 (a 25-fold increase compared to today).

However, Member States' ambitions are nearly twice as high and they aim to achieve 111 GW of offshore renewables by 2030.

Early planning will be key to reach these targets, as well as environmental data and coexistence with other sea-users, including fisheries.

3 species included in the ICES advice on list of Descriptor 3 species to support reporting by EU Member States under MSFD Article 17 (https://doi.org/10.17895/ices.advice.21332967)

[4] https://energy.ec.europa.eu/topics/renewable-energy/offshore-renewable-energy_en

Taking that into account the Commission have recently presented a **European Wind Power Action Plan**[5] offering immediate measures to ensure that the clean energy transition goes hand-in-hand with industrial competitiveness, and that wind power continues to be a European success story. The Action Plan will help to maintain a healthy and competitive wind energy supply chain, with a clear and secure pipeline of projects, that attracts the necessary financing and helps the industry compete on a level playing field globally. It is accompanied by a **Communication on delivering on the EU's offshore energy ambition**[6]. The Communication identifies 4 priorities: offshore grid development, permitting, maritime spatial planning, support to Research & Innovation. It announces a research and innovation action in 2024 on environmental impact and socio-economic impacts of offshore wind farms. The Commission will support Member States in establishing the necessary links between ORE developments, MSP and the marine strategies developed under the MSFD for achieving the offshore renewable ambitions and good environmental status. There is a strong emphasis on co-existence and multiple use of the marine space.
The current request to ICES comes in this context and will build on the knowledge gaps identified by recent review studies, such as "Overview of the effects of offshore wind farms on fisheries and aquaculture" ([7]), "Recommendations for positive interactions between offshore wind farms and fisheries" ([8]), the Study for the PECH committee in 2020 on the impact of the use of offshore wind and other marine renewables on European fisheries ([9]) and the report on mapping potential environmental impacts of offshore renewable energy ([10]) initiated by the European Environment Agency.
The advice will also benefit from the call for a themed article sets (TS) on "Assessing the impact of expanding offshore wind energy" by the ICES Journal of Marine Science (ICES JMS).

Planning ICES	Please see Annex below
WG(s) involved	WGSOCIAL, WGECON, WGSFDM, WGCEAM, WGMPCZM, WGOWDF, WGMBRED, WGORE, WGEAWESS, WGIBAR, WGINOSE
Preparation timing	-

[5] https://ec.europa.eu/commission/presscorner/detail/en/ip_23_5185

[6] https://energy.ec.europa.eu/publications/communication-delivering-eu-offshore-renewable-energy-ambition_en

([7]) Van Hoey, G., Bastardie, F., Birchenough, S., De Backer, A., Gill, A., de Koning, S. Hodgson, S., Mangi Chai, S., Steenbergen, J., Termeer, E., van den Burg, S., Hintzen, N., Overview of the effects of offshore wind farms on fisheries and aquaculture, Publications Office of the European Union, Luxembourg, 2021, p. 99.

([8]) Short Background Study by the European MSP platform- May 2020.

([9]) Stelzenmüller, V. et al., 2020, Research for PECH Committee – Impact of the use of offshore wind and other marine renewables on European fisheries. European Parliament, Policy Department for Structural and Cohesion Policies, Brussels.

([10]) Galparsoro, I., Menchaca, I., Seeger, I., Nurmi, M., McDonald, H., Garmendia, J.M., Pouso, S., Borja, Á., 2022, Mapping potential environmental impacts of offshore renewable energy. ETC/ ICM Report 2/2022: European Topic Centre on Inland, Coastal and Marine waters, 123 pp.

Review group	RGORE by correspondence in February 2025
Advice drafting group	ADGORE 10-13 March 2025
ACOM Webex	WCORE 26 March 2025
Release date	11 April 2025

Annex 1

Table 1 – Request process

Aim		Parties Involved	Process	Timeline
Economic and social impacts of offshore renewable energy (ORE) on fisheries and methodologies to assess (ecological and cumulative) impacts in the Celtic Sea, Greater North Sea and Baltic Sea (ICES ecoregions)				
Part 1	Review economic and social impacts of ORE on fisheries	WGSOCIAL, WGECON, WGSFD, ACOM, SCICOM, Secretariat	Intersessional meetings In person workshop	June 2024 – January 2025
Part 2	Cumulative impacts of ORE and mitigation measures	WGCEAM, WGMPCZM, WGOWDF, WGMBRED, ACOM, SCICOM, Secretariat	Intersessional meetings In person workshop	June 2024 – January 2025
Part 3	Review of the ecological, hydrographic, fisheries and select species impacts of ORE developments	WGMBRED, WGOWFD, WGORE, WGEAWESS, WGINOSE, WGIBAR, ACOM, SCICOM, Secretariat	Intersessional meetings In person workshop	June 2024 – January 2025
Consolidation Workshop	Review, merge and consolidate work done by parts 1-3, and identify recommendations and conclusions.	Joint	Workshop	February 2025

Aim		Parties Involved	Process	Timeline
Economic and social impacts of offshore renewable energy (ORE) on fisheries and methodologies to assess (ecological and cumulative) impacts in the Celtic Sea, Greater North Sea and Baltic Sea (ICES ecoregions)				
Peer-review	Independent peer review of workshop report	External Experts	Intersessional work	February – March 2025
ADGORE (4-days)	ACOM led advice drafting group	ACOM members, chairs of workshop, SCICOM, secretariat	Advice Drafting Group meeting	March 2025
WCORE	ACOM web conference	ACOM, secretariat	Online conference	March 2025
Release	Release of advice and publication of workshop report	Secretariat	Publication	April 2025

ICES is in a unique position to mobilize its science and advice networks to address this interdisciplinary, cross-sectoral advice request. In order to successfully tackle the overarching scope and need for continuous integration, ICES must ensure both inter- and cross-sectoral cooperation through-out all stages of advice production. The suggested process includes a large coordination element, multi-expert involvement, and continuous overview from ACOM and SCICOM leadership. The proposed budget is a reflection of the holistic approach needed to provide a robust basis of scientific information that will allow informed trade-off management decisions on ORE.