

Position Description

1. General Information

Name of the position	A strategic assessment approach to evaluating interactions between offshore wind energy and commercial fisheries
Foreseen date of enrolment	1 July 2024
Position is funded by	<ul style="list-style-type: none"> • COFUND, Marie Skłodowska-Curie Actions (MSCA), Horizon Europe, European Union • Institut Français pour l'Exploitation de la Mer (IFREMER) • University of Tasmania (UTAS) • Commonwealth Scientific and Industrial Research Organisation (CSIRO) • Blue Economy Cooperative Research Centre
Research Host	Institut Français pour l'Exploitation de la Mer (IFREMER)
PhD awarding institutions	Université de Bretagne Occidentale & University of Tasmania
Locations	Primary: Plouzané, France Secondary: Hobart, Australia
Supervisors	Dr Olivier Thébaud (IFREMER) Dr Emily Ogier, Dr Steven Rust & Professor Marcus Haward (UTAS)
Group of discipline	Natural resource economics; spatial econometrics; Ecological-economic modelling; Institutional economics and governance analysis

2. Research topics (only one of these projects will be funded)

Project 1: *An economic approach to strategic assessment of interactions between offshore wind energy and commercial fisheries*

Offshore wind energy has rapidly emerged as a promising source of renewable energy, but it also presents multiple challenges. This includes conflicts with fishing activities, resulting from the competition for space, as well as potential cascading effects resulting from fishing effort displacement, which can result in economic losses for the fishing industry. In the face of this challenge, the current approach to impact assessments and potential compensation has largely borrowed from the project-by-project impact assessment approaches used for land-based industrial developments.



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Given the fluidity of marine ecosystems and the adaptive capacity of the fishing industry, there is a need to develop systematic assessment methods and tools which enable assessing aggregate impacts across multiple projects, considering the potential interactions between the effects of individual projects. This implies evaluating the dynamics of spatial and economic responses of fishing activities to spatial exclusion, taking into account the ecological, economic and regulatory drivers, which influence these responses, as well as the governance regimes, which could enable integrating such understanding in determining spatial allocation and compensation across sectors.

The project will develop an economic analysis of the complex interactions between wind energy development at sea and the structure of fishing activities, considering the cumulative impacts of multiple wind farm developments on spatial crowding of fishing areas, the associated changes in economic incentives for fishers, and the resulting changes in fishing activities. It will involve case studies of offshore wind energy developments and their interactions with commercial fishing in France and Australia. Surveys of key stakeholders will be carried out to gain insights into the main adaptive responses likely to be observed from the fishing industry following the implementation of wind energy projects, as well as drivers and constraints likely to influence these responses. Using the increasingly fine-resolution data available regarding the spatial distribution of commercial fishing activities and production as well as data relating to the economic operations of fishing fleets, the research will develop and apply spatial econometric modelling techniques to examine the potential impacts of alternative wind energy development scenarios at multiple scales (from local to regional), and assess cumulative impacts across projects. Results will be used to inform alternative approaches to factoring fishery impacts in the strategic planning of offshore wind development.

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Research Fields: Offshore wind – Fisheries interactions; economics of fisheries displacement; spatial econometrics; cumulative impacts assessment; marine spatial planning

Project 2: An ecological-economic approach to strategic assessment of interactions between offshore wind energy and commercial fisheries

Offshore wind energy has rapidly emerged as a promising source of renewable energy, but it also presents multiple challenges. This includes conflicts with fishing activities, resulting from the competition for space, as well as potential cascading effects resulting from fishing effort displacement, which can result in economic losses for the fishing industry. In the face of this challenge, the current approach to impact assessments and potential compensation has largely borrowed from the project-by-project impact assessment approaches used for land-based industrial developments. Given the fluidity of marine ecosystems and the adaptive capacity of the fishing industry, there is a need to develop systematic assessment methods and tools which enable assessing aggregate impacts across multiple projects, considering the potential interactions between the effects of individual projects. This implies evaluating the dynamics of spatial and economic responses of fishing activities to spatial exclusion, taking into account the ecological, economic and regulatory drivers, which influence these responses, as well as the governance regimes, which could enable integrating such understanding in determining spatial allocation and compensation across sectors.

The project will develop an ecological-economic analysis of the complex interactions between wind energy development at sea and the structure of fishing activities, considering the cumulative impacts of multiple wind farm developments on spatial allocation of fishing activities, and the associated changes in the marine populations supporting commercial fishing. It will involve case studies of offshore wind energy developments and their interactions with commercial fishing in France and Australia. Surveys of key stakeholders will be carried out to gain insights into the main adaptive responses likely to be observed from both the fishing industry and fish resources following the implementation of wind energy projects, as well as drivers and constraints likely to influence these responses. Building on existing ecological-economic simulation modelling frameworks developed by the partners and on the data and empirical models available to describe both fish population and fishing fleet dynamics, models will be developed which enable exploring the trade-offs associated with alternative offshore wind development scenarios.



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Research Fields: Offshore wind – Fisheries interactions; ecological-economics modelling; trade-off analysis; marine spatial planning

Project 3: *Analyzing the governance dimensions of managing interactions between offshore wind energy and commercial fisheries*

Offshore wind energy has rapidly emerged as a promising source of renewable energy, but it also presents multiple challenges. This includes conflicts with fishing activities, resulting from the competition for space, as well as potential cascading effects resulting from fishing effort displacement, which can result in economic losses for the fishing industry. In the face of this challenge, the current approach to impact assessments and potential compensation has largely borrowed from the project-by-project impact assessment approaches used for land-based industrial developments. Given the fluidity of marine ecosystems and the adaptive capacity of the fishing industry, there is a need to develop systematic assessment methods and tools which enable assessing aggregate impacts across multiple projects, considering the potential interactions between the effects of individual projects. This implies evaluating the dynamics of spatial and economic responses of fishing activities to spatial exclusion, taking into account the ecological, economic and regulatory drivers, which influence these responses, as well as the governance regimes, which could enable integrating such understanding in determining spatial allocation and compensation across sectors.

The project will explore the governance dimensions associated with the management of the complex interactions between wind energy development at sea and the structure of fishing activities. It will involve case studies of offshore wind energy developments and their interactions with commercial fishing in France and Australia. Surveys of key stakeholders will be carried out to gain insights into the main conflicts likely to arise from the implementation of wind energy projects due to changes in spatial allocation of fishing access and resource availability. The survey will also seek to gain an understanding of the current governance arrangements and stakeholder perceptions on possible evolutions in these arrangements. Building on existing frameworks for the analysis of cross-jurisdictional conflicts, and on the available data regarding fishing activities and resources, the research will consider the extent to which such conflicts can adequately be captured in frameworks for impact assessments of offshore wind developments. The results will be used to inform the design of alternative governance regimes and compensation mechanisms.

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Research Fields: Marine Ecology, Fisheries Science, Marine Conservation, Data Science, Monitoring and assessment, Underwater Imagery, Ecological Indicators

3. Employment Benefits and Conditions

The French Institute for the Exploitation of the Sea (IFREMER) offers a 36-months full-time work contract (with the option to extend up to a maximum of 42 months). The total working hours per week is 38h.

The remuneration, in line with the European Commission rules for Marie Skłodowska-Curie grant holders, will consist of a gross annual salary EUR 27,900. Of this amount, the estimated net salary to be received by the PhD candidate is EUR 1,770 per month. However, the definite amount to be received is subject to national tax legislation and depends on the applicant's professional experience.



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Benefits include

- Becoming a Marie Skłodowska-Curie fellow and be invited to join the Marie Curie Alumni Association.
- Access to all the necessary facilities and laboratories at IFREMER and UTAS.
- Tuition fees exemption at both PhD awarding institutions.
- Yearly travel allowance to cover flights and accommodation for participating in AUFRANDE events.
- 10,000 EUR allowance to cover flights and living expenses for up to 12 months in Australia.
- Same leave conditions as other IFREMER employees, including a minimum of 2.5 paid leave days per month and additional bank holidays and other leave days.
- Full health insurance, including maternity and parental leave.
- Access to social activities and help services.

4. PhD enrolment

Successful candidates for this position will be enrolled by the following institutions and must comply with their specific entry requirements, in addition to AUFRANDE's conditions.

Applicants must hold a diploma in a relevant discipline conferring the degree of master at the end of a training programme establishing the aptitude for research. The training program must include a research component equivalent to 25% of a two-year Masters Coursework degree with a thesis component grade of at least Distinction grade.

Applicants must demonstrate an English language proficiency equivalent to an overall IELTS score above 7 and no band below 6.5. Note that the test needs to be completed no more than two years before enrolment. For more information about the tests accepted and scores required, visit:

<https://www.utas.edu.au/research/degrees/what-is-a-research-degree>

More information on Université de Bretagne Occidentale's requirements

Visit the website: <https://www-iuem.univ-brest.fr/training/edsml/?lang=en>

More information on University of Tasmania's requirements

Visit the website: <https://www.utas.edu.au/policy/procedures>



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