

N/Ref: FEM/2018-153

Object: ***Post-doctorate in socio-ecological modeling – 18-month contract***

Company Description

FRANCE ENERGIES MARINES (FEM), the national reference institute dedicated to research, development and innovation in the field of Marine Renewable Energies (MRE), supports the nascent MRE industrial sector with the means and skills that increase competitiveness by mutualizing research and development costs, reducing risks and accelerating the acquisition of data and knowledge. The principle of this structure is based on a broad public-private partnership involving industrial groups, SMEs, regional authorities, advanced research and training institutions and competitiveness clusters.

FEM is assigned a specific role of federating and unifying marine renewable energy industrial R&D, working within a model of project co-financing by the national Investments in the Future program and by FEM members, while also participating in European research projects.

The headquarters of FEM are located in Brest, France.

Position Description

In accordance with the R&D roadmap established by its members, the objectives of the France Energies Marines “Environmental and Socio-Economic Impacts of MREs” research program, are:

- to identify the real ecological and socio-economic issues raised by the installation, operation, maintenance and dismantling phases of MRE projects;
- to develop tools and methodologies for measuring, qualifying, analyzing and predicting the environmental and socio-economic impacts of MRE technologies that have been identified.

In order to meet this dual objective, collaborative research projects are launched each year and cover a broad spectrum of biological and socio-economic R&D themes.

The three year APPEAL project, which began in February 2018, proposes an integrated approach to the understanding of the socio-economic and environmental aspects of floating wind farms to be installed off the French continental coast. Innovative research approaches are needed to address the complexity of these socio-ecological systems and to better link basic research to final decision-making. The main objective of the APPEAL project is to implement a combined human and social sciences (SHS) approach to measure the impacts of offshore wind farms (OWF) on the functioning of coastal socio-ecosystems, and to develop diagnostic tools to inform decision-making regarding the location of these parks. The methodological development of numerical tools combined with decision statistics will allow a transversal use of indicators that are not currently common to SHS and the natural sciences. This will be done in order to propose a new integrated approach to the study of the impact OWF on the socio-ecosystems in which they are placed.

The interdisciplinary approach applied to the social and natural sciences includes qualitative and quantitative dimensions coupling the results of decision-making ethnography with a quantitative approach to ecosystem modeling and the sociology of networks. These results will be cross-referenced with the results obtained from a food web analysis in ecology. This implies implementing a socio-ecosystemic

model and represents the main task of the postdoctoral position. The tools suggested to initiate the study are the Bayesian Belief Networks and qualitative models in oriented digraphs, but other quantitative tools may still be addressed.

The zone of development for a pilot OWF at Groix & Belle-Île on the Atlantic coast will be the main reference site for the project with planned comparisons with other OWF pilot sites in the Mediterranean and the Courseulles bottom fixed offshore wind farm site (Channel) studied in the ongoing FEM/ANR project TROPHIK.

Scientific co-supervision:

- François Le Loc'h
IRD / UMR LEMAR (<https://www-iuem.univ-brest.fr/LEMAR/recherche/DISCOVERY/composition-de-lequipe>)
- Camille Mazé
CNRS / UMR LEMAR (<https://www-iuem.univ-brest.fr/apolimer/about/board/maze-camille>)
- Nathalie Niquil
CNRS / UMR BOREA (<http://borea.mnhn.fr/en/users/nathalie-niquil>)

Missions:

Within the FEM R&D team and under the responsibility of the “Environmental and Socio-Economic Impacts of MREs” project manager, the post-doctoral researcher will:

- Apply his/her expertise to the use of socio-ecosystemic modelling tools,
- Complete a bibliographic analysis of the context and methods for socio-ecosystemic modelling,
- Model a socio-ecosystem in which the future floating wind farm of Groix will be constructed,
- Identify methods for determining potential impacts and comparing modelled impacts,
- Write scientific articles utilising results from the described work,
- Be integrated and implicated in the FEM R&D team and activities, and will participate in the animation of R&D strategy and the development/management of collaborative research projects.

Candidate Profile

You have a doctoral degree in an interdisciplinary field ideally situated between ecological and human sciences and experience in modelling marine ecosystems and in the evaluation of environmental impacts. Due to the international focus of the marine renewables sector, a mastering of English is required.

➤ Degree:	➤ Specific skills:
▪ Doctorate in marine ecology	▪ Ecology and the functioning of coastal ecosystem, ▪ Socio-ecosystemic modelling tools, ▪ R&D project management, ▪ Good English skills.
	➤ Personal qualities:



	<ul style="list-style-type: none">▪ Strict scientific rigor,▪ Initiative and multi-disciplinary spirit,▪ Taste for research and teamwork,▪ At ease in expressing oneself, at convincing others and in communicating in a collaborative context.
--	--

Practical Information

Starting date: June 2018, for a temporary position of 18 months (French “CDD”).
Final date for applications: May 7th, 2018.

Note: The position is financed within the Strategy for Durable Attractivity (SAD) program managed by the Brittany Region, and as such the successful candidate will have spent at least 12 months abroad (outside of France) over the last three years.

The position will be based at the France Energies Marines headquarters:

Bâtiment Cap Océan
525, avenue Alexis de Rochon
29280 Plouzané - FRANCE

Please send your CV and cover letter to the following email address:

contact@ite-fem.org

For any additional information, please contact: georges.safi@ite-fem.org

In case of an expected secondment of the candidate by a member of France Energies Marines, the application should mention the agreement of the present employer.