

R&D engineer/Postdoctoral researcher in structural and vibration analysis of TLP floating sub-station for offshore wind farms (F/M/X)

O/Ref: FEM-SAS-2024-320
19/07/2024

France Energies Marines institute

France Energies Marines is the Institute for Energy Transition dedicated to offshore wind energy. Its mission is to provide, enhance and nurture the scientific and technical environment necessary to overcome the obstacles facing this rapidly developing sector. With a multidisciplinary team of nearly 90 employees and a model of public-private collaboration, the Institute has a raison d'être: R&D, whether it is collaborative or carried out as part of a service activity.

Context

France Energies Marines is conducting, together with other partners (ENSTA Bretagne, Ifremer, Centrale Méditerranée, RTE, SuperGrid, Chantiers de l'Atlantique, TotalEnergies, RWE), the [AFOSS-DC](#) project. This project aims to design a first architecture of floating offshore substation for direct current applications needed for future large offshore wind farms. Based on electrical topside defined in preceding work package, two concepts of floaters will be investigated, and basin test will be conducted to perform motion and vibration analyses.

Job description

In the framework of this position, the successful candidate will be in charge of the following tasks:

- Based on a defined geometry, set-up a FEA numerical model
- Applying pressure loading due hydrostatic and waves.
- Structural analysis and check due to hydrodynamic loads
- Hydrodynamic basin tests follow-up, analysis and comparison between model and tests regarding structural behaviour of TLP.

The deliverables to be produced by the successful candidate during his/her work in the project are the following:

- A section of a report describing the "optimal" designs. It will include drawings and analysis of the results regarding the TLP design.
- A report including the model design and calibration (tendons). An experimental and numerical comparison will also be made.

The chosen person will be supervised by engineers and professors from ENSTA Bretagne, Ifremer and France Energies Marines.

Profile and skills

Initial training

Engineer / Master II / PhD degree in naval Architecture with emphasis on structural calculations and fluid-structure interactions. Additional expertise in hydrodynamic and numerical modelling of offshore structures is greatly appreciated

Specific knowledge and skills

Required:

- Naval Architecture
- Structural analysis (mechanics)

Desirable:

- Hydrodynamic
- Fluid-structure interaction
- Mooring of offshore structure
- Knowledge of MRE system

Professional assets

- Excellent English skills
- Strict scientific rigor
- Adaptability to new disciplines
- Initiative, scientific curiosity 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

- **Type of contract:** Fixed-term contract (CDD)
- **Duration of the contract:** 9 months
- **Starting date:** 9 September 2024
- **Application deadline:** 23 August 2024
- **Work location:** Brest and surrounding area. The position is mainly located at ENSTA Bretagne (around 70%) with periods of work at France Energies Marines (20%) and Ifremer (10% mainly during basin campaign test).

ENSTA Bretagne
Laboratoire FSI
2, rue François Verny
29806 Brest

France Energies Marines
Bâtiment Cap Océan
525, avenue Alexis de Rochon
29280 Plouzané

Ifremer
1625 route de Sainte-Anne
29280 Plouzané

In accordance with the regulations, priority will be given to people with disabilities, where skills are equal.

How to apply

- Applications must consist of a **CV** and a **cover letter**.
- In case of a candidate being seconded by a member of France Energies Marines, the application must mention the agreement of the current employer.
- To apply, please go to the France Energies Marines **website** under the **Join Us** section.
- For more information on this position, please contact: contactrh@france-energies-marines.org