

Floating Offshore Wind –Suction Anchor Development Internship Engineer - Paris (La Défense) Ref : 2H-INT-PAR-2022-3

2H Offshore (www.2hoffshore.com) is seeking an enthusiastic, highly motivated engineer student with an aptitude for analytical work for its development in the renewable energy sector.

Subject

With floating wind being developed globally at commercial scale over the coming years, the anchoring foundations are a critical element in the safe long-term position keeping of the floaters and require a detailed understanding of the resulting loads and geotechnical site conditions. Anchoring methodologies which account for the full Engineering, Procurement, Construction, and Installation (EPCI) cost and risk need to be considered from an early point in the development. One such technology is suction anchors which have a relatively low EPCI cost and good risk profile relative to other anchoring options. They can also be used for shared anchoring (typically 2-3 mooring lines connected to a single anchor) to reduce costs further and locate the mooring attachment padeyes below mudline to reduce the loading on the anchor.

The goal of this internship is to research existing suction anchor technology, develop geotechnical models for a range of soil profiles, and develop a structural FEA model that can be optimised depending on mooring loads and geotechnical site conditions.

Main topics will include (but not limited to):

- Review of current suction anchor designs and technology in the floating wind, fixed wind, and oil and gas sectors;
- Review of academic literature and codes and standards from relevant offshore institutes (DNVGL, API, ISO, NORSOK, Etc.) for geotechnical and structural modelling for installation & in-place conditions for sand, clay, and hybrid soil conditions;
- Develop suitable geotechnical models based on the prior research;
- Develop a suitable structural model in ANSYS based on the prior research;
- Write a summary report including all literature review, input data, methodologies, results, and conclusion.

Requirements

The successful candidate will perform design generation and optimisation activities considering the functional, fabrication, installation, and in-service requirements. This will include developing calculations and performing installation and in-place geotechnical and structural analysis and assess failure modes such as bearing, sliding, overturning (geotechnical), strength, buckling, and fatigue (structural) to ensure the design passes code

allowable. The role will also involve extensive communication of technical results and conclusions to other members of the team – including meetings, presentations, and the preparation of written reports, and other deliverables. 2H uses several software and FEA packages such as Orcaflex, Flexcom, ANSYS, Plaxis, OPile, and SACS and training will be provided throughout the process as required.

Trainee's Profile

- Master's degree in mechanical, structural, geotechnical, ocean engineering, or a related discipline.
- Aptitude and enthusiasm for carrying out analytical work efficiently
- Excellent problem-solving skills
- Fluent in French and English
- Desire to take responsibility and ownership of tasks
- A desire to develop a career and expertise in the renewable industry
- Desirable to have software experience with Microsoft Office, finite element analysis packages (e.g., ANSYS, Abaqus, SACS, Plaxis, ect), and some knowledge of computer programming is preferable (Python)

2HOffshore Offer

2H offers a vibrant work environment where technical excellence, operational delivery, continuous improvement, and teamwork. There is also plenty of opportunity for international travel (subject to COVID restrictions), career development, and broadening your horizons into different areas of engineering within 2H's business.

Position will be in 2H office in Paris La Défense.

In addition, we offer:

- Structured training
- Support with professional engineering qualifications
- Fun team atmosphere, team building and regular social events
- Work in an international environment
- Flexible working hours
- Wage according to French Regulations
- Reimbursement of Paris and suburbs public transportation (Pass Navigo)
- Days off according to French Regulations

How to Apply & Conditions

- The present offer is opened to apply from 1st November to 15 December 2022
 - Offer is opened to EU Schools and universities
 - Minimum level degree is Master of Science degree level
 - Minimum duration of the internship is 6 Months
 - Tentative beginning of the internship is Q1 - 2023 depending on School's calendar
 - Application to pierre.guerin@2hoffshore.com & paris@2hoffshore.com
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