

Offshore Wind – Decarbonation of Floating Power Units

Internship Engineer - Paris (La Défense)

Ref : 2H-INT-PAR-2022-2

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

Subject

In December 2015, the COP21 in Paris marked a historic turning point when all the UNFCCC members adopted an agreement on limiting the carbon footprint. To date, 197 countries have agreed to gradually reduce fossil fuel use and CO₂ emissions to achieve net carbon neutrality by 2050 and keep global warming below 2°C by 2100. The challenges of decarbonisation for manufacturers are technical, economic, financial and societal. To meet these challenges, the industrialists need to preserve their competitiveness, and in particular the impact of CO₂ emissions on the price of their products; avoid the environmental obsolescence of their products; and gain the trust of new customers with concrete evidence of their actions to reduce CO₂ emissions.

As a leader in advanced systems engineering for the marine energy sector, 2H Offshore is playing its part to help clients on their journey to net zero. We are driving three main approaches:

- Reducing carbon emissions by improving the efficiency of existing conventional energy production & operations.
- Preventing future carbon emissions by enabling and optimising clean sources of energy.
- Removing carbon emissions by creating innovative solutions for capture and storage.

In this context of decarbonisation, the use of water-cooling solutions such Water Intake Riser has been considered by offshore actors. In the race of efficiency new components and deeper water are considered leading to new issues and new design challenges. In order to better understand these new issues, 2H has developed a tool to estimate the CO₂ gain.

The goal of this internship is to identify the problematics associated with the new key challenges, to validate the tool developed by 2H and to develop a case study and sensitivities.

Main topics will include (but not limited to):

- State of the art of exiting and coming projects
 - Review of 2H existing concept and/or similar concepts
 - Handling of the CO₂ estimation tool developed by 2H
 - Validation of the tool in comparison with mechanical and hydrodynamic theory
 - Develop a case study for deep sea water intake riser
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- Prepare a tentative 2H design practice methodology

Requirements

The successful candidate will perform design activities including calculations, dynamic structural analysis, and system configurations for a variety of subsea structures. She/he will study acceptable structural and fatigue performance of the designs, whilst considering the functional, fabrication, installation, and in-service requirements. 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 packages, from specialist riser analysis tools such as OrcaFlex and SACS to general-purpose finite element analysis and design tools such as ANSYS and Solidworks. Training will be provided throughout the process as required.

Trainee's Profile

- Master's degree in mechanical, structural, 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
- Software experience with Microsoft Office, finite element analysis packages (e.g., DeepLines, Orcaflex, ...) 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 are highly regarded. 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
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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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