

Case Study

Jonathan Glasspool



Career Development

Jonathan joined IDCORE in 2021 to enter the offshore renewables industry and kick start his career in that sector. The IDCORE programme provides structured training and the opportunity to undertake research on projects with leading industry companies.

After graduating from the University of Edinburgh in 2019 with a master's degree in Mechanical Engineering, Jonathan completed a two-year graduate training contract with Bosch Rexroth, a company that manufactures hydraulic motors for mobile machinery in Fife. At the end of this programme, he wanted to find a new direction, and the chance to work on solutions for the energy crisis and climate change. As a keen sailor, he was particularly aware of the potential for growth within the offshore wind industry and saw the sector as an opportunity to apply his mechanical engineering skills in a meaningful way.

He did consider a more traditional PhD route, but didn't want an academic career, so IDCORE's blend of training and industrial experience was very appealing. The academic training has proved invaluable, delivering a breadth of learning which doesn't answer every question but does show you where to go for the answers, and provides the resources for reaching them. Meanwhile, the industrial element has given him competencies and experiences that help him progress towards Chartered Engineer status with the IMechE.

Project Sponsor

Mainstream Renewable Power, the company sponsoring Jonathan's project are a developer of 'green field' wind sites both onshore and offshore. Mainstream has a track record of de-risking projects through the development process and creating investment-ready projects for construction. They see floating offshore wind as an important growth area and were awarded an option agreement through the ScotWind clearing process for the 1.8GW Arven site, which is being developed as a floating project with joint venture partner Ocean Winds.

Jonathan was attracted to them as they are an exciting company with an impressive rate of growth, and the project they had identified for IDCORE was broadly defined and flexible, giving him control of the detail of his research.



The process of selecting my project was an intense one, although it was one through which I learned a lot. We were offered some amazing opportunities, though the short timeframe in which we had to make a decision combined with their geographical dispersion was a challenge, particularly with a partner's needs to think of, too. I felt very fortunate to secure a project with Mainstream Renewable Power, who have provided me with the freedom to define my own project, the support to make it possible, and the flexibility to work in the best way for me and my project.

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Supporting Commercial Development

To help position Mainstream for the future, Jonathan is exploring mooring systems for floating offshore wind. He is using the Orca Flex code to create dynamic models of two different systems to assess the probability and costs of failure. He will be bringing this analysis together in a lifetime cost model. Jonathan's project is focusing on a semi-submersible platform design that has been modelled extensively by the academic community, with the ultimate aim of developing a methodology that can be applied more broadly to the varied projects that Mainstream are working on.

The first year of the research provided the opportunity to dive into the academic literature, process new information, and compare different methods for the analysis of mooring lines. This was a process in which Jonathan encountered rabbit holes and dead-ends, but guided by the supervision team, he has emerged with a clear plan ahead and has integrated with the growing Mainstream team while building his professional network.

Mainstream have recently merged with Aker Offshore Wind. This has brought in significant technical competencies in floating offshore structures from the Aker group of companies. Following the merger, Jonathan has built strong links with the technical team in Oslo and is working with them on technical studies for Mainstream's projects.



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The projects we are developing now will be coming into operation in the early 2030s – we are expecting a lot of things to change in the offshore wind market between now and then.

As an organisation we are focussed on commercial delivery, but we also need to keep ourselves ahead of the changes that are coming. This is where Jonathan's project comes in. Floating offshore wind is on the cusp of commercial deployment and the systems used for mooring them are a key area of risk that we need to manage. With Jonathan we get access to a resource with enough time to address these issues effectively. He has come to us with the right experience and skills to deliver the work, he is enthusiastic and resourceful and through his academic supervisors he gives access to some of the leading academic expertise in this area.

Chris Morris, Bid Manager, Mainstream Renewable Power



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