# Case Study

Andrew Russell

About Andrew

Andrew came to IDCORE from an MEng in Chemical Engineering at Newcastle University, during which he had undertaken a placement year at Siemens Gamesa Renewable Energy. This gave him an insight into renewable energy that made him realise he wanted to pursue a career in the sector. IDCORE is now providing him with the knowledge and experience required to match his ambitions.

IDCORE's taught modules have built a foundation of very relevant knowledge which is now being supplemented by exposure to industrial activity, engagement and projects that would not have been possible through a conventional PhD programme.

My undergraduate experience allowed me to see first-hand how quickly the renewable energy industry is developing, the impact it can have on carbon emissions and the potential for me to contribute and make my own impact in the sector. IDCORE is helping me to realise this ambition.

Overall, IDCORE has already had a significant positive impact upon my life and career. I am developing both academically and industrially relevant skills whilst working on a fascinating research project, all while receiving excellent support from IDCORE's administrative team and my academic and industrial supervisors. I can only thank them for the opportunity and genuinely encourage anyone who has the chance to be involved in the programme to do so.
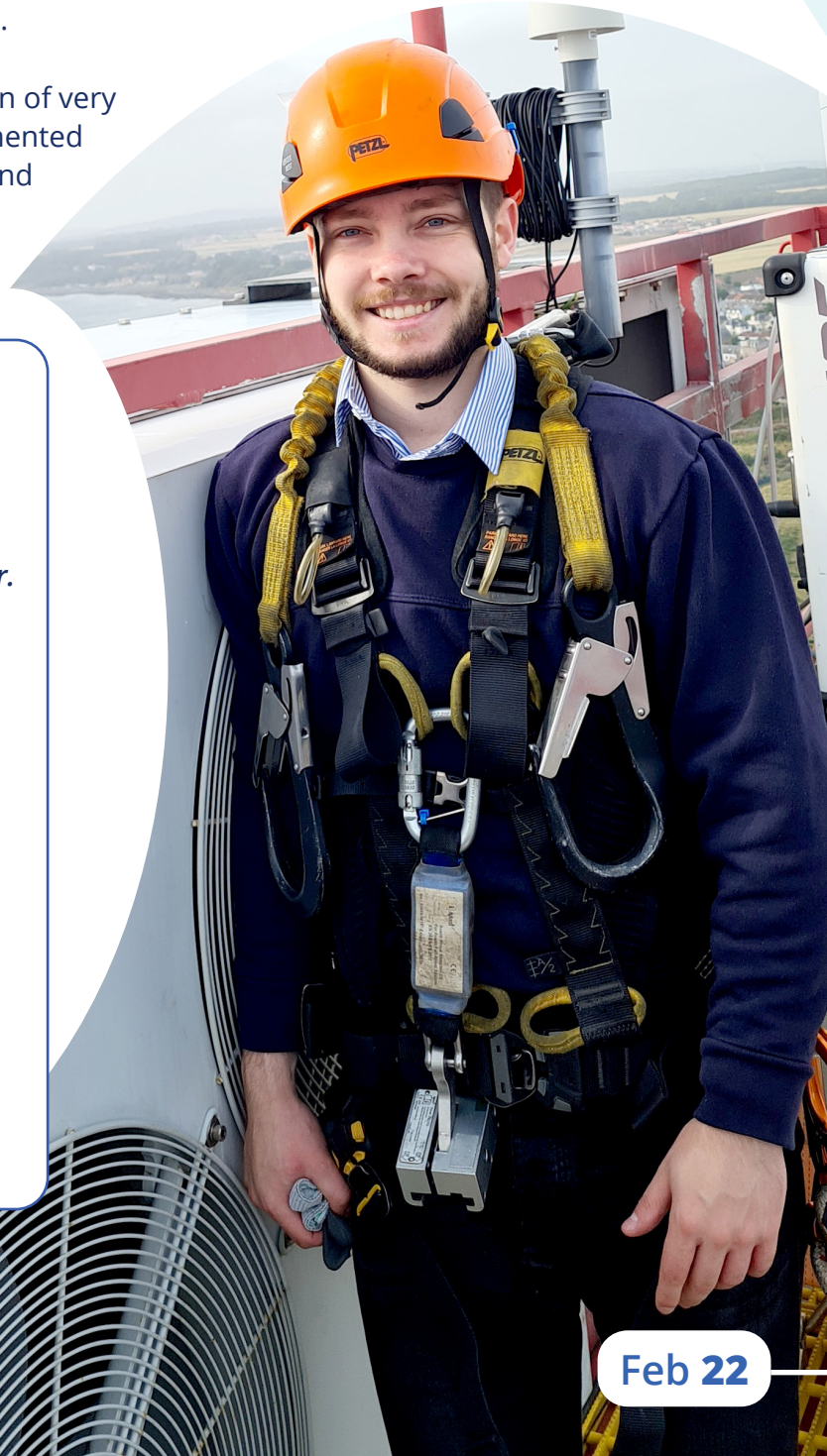
Andrew's Sponsors

Andrew started his project with Wood Group in May 2021. It is a project focussing on floating offshore wind, involving a start-up offshore wind farm developer, Flotation Energy. This is a unique opportunity to work simultaneously with both a small start-up company and a large multi-national business. Andrew is gaining first-hand experience of the diversity within an exciting industry, where he has already contributed to key project decision making processes. Both companies have been very supportive and see value in being involved with IDCORE and the industrially relevant research it can deliver.

Floating wind technology is developing rapidly and Andrew is gaining an excellent insight into the industry's landscape and direction, along with an invaluable network of connections and relationships with external companies.

> *Andrew has been a key member of the team for our pioneering Green Volt project, which aims to be the largest floating wind farm in the world by 2026*
>
> *Alexander Quayle – Project Manager, Flotation*

Andrew's Project

At the offset, Wood presented Andrew with a range of possible project topics and gave him the freedom to decide his focus. He has chosen to look at utilising LIDAR to measure incoming winds and assist the control of floating offshore turbines. The project has required a detailed literature review, which Andrew compiled into a research paper and presented at a conference. He has also been working on developing numerical models to simulate wind turbine control algorithms, a steep learning curve which has been very rewarding.

The network of industrial connections Andrew has developed is already delivering benefits, helping him to secure real-life wind turbine deployments of LIDAR for his data collection. So far, this has led to LIDAR deployment on a nearshore turbine where the team are soon to be undertaking a measurement campaign, with plans for further deployments on floating turbines.

As a graduate engineer in a small and ambitious team, Andrew has been able to get involved in a range of tasks alongside his project that create additional value for the business. These have included reviewing floating substructures and turbines, providing guidance on available ports and facilities and exploring some of the complexities of wind turbine control.