



Alumni Case Study

John McDowell



EPSRC & NERC InDustrial CDT
for Offshore Renewable Energy www.idcore.ac.uk

My IDCORE project was sponsored by Sustainable Marine, a small, highly innovative tidal stream device developer. I enjoyed work with them tremendously and stayed with them for four years after completing my EngD.

Originally the plan had been to work on a mooring system optimization for the device that Sustainable Marine had in development, but my initial investigation helped identify a project that ultimately helped steer the company in a new direction. The conventional wisdom was that sites with high tidal flows provide tidal turbines with the highest energy yields and therefore the greatest commercial returns. We were able to show instead that deploying in sheltered, near shore sites could reduce operating costs and improve the through life returns, even with significantly lower tidal flow speeds.

This was a really exciting project to be involved in, with some very tangible outcomes. It led to me moving to Scotland with the company and working in Canada over several months as we delivered our first commercial deployment.

John McDowell, Research Lead – Ocean Engineering, DEEP

Unfortunately, the deployment in Canada was beset with problems which were largely outside of the company's control and full commercial viability remained out of reach. At this point John left Sustainable Marine and began work at DEEP.

DEEP

DEEP (deep.com) is an international design and engineering organisation developing new technologies to enable humans to live, work, and explore underwater. As Research Lead for Ocean Engineering within DEEP, John still uses the knowledge and skills he gained from being part of IDCORE, as well as the contacts.



Background

Prior to joining IDCORE, John's first degree was in Oceanography from the University of Liverpool. After a spell in various green sector jobs, including working for an upcycling company in Canada and some time with Ofgem working on their various renewables funding schemes, he went to the University of Plymouth to complete an engineering focussed MSc in Marine Renewable Energy. As he wasn't from an engineering background this was quite a risk, but it paid off – he enjoyed the course and it set him up well for joining IDCORE in 2015. With hindsight, he wishes that he'd gone into engineering sooner.

Why IDCORE

John was attracted to IDCORE by the industrial focus of the centre. He wanted to take advantage of the practical and theoretical experience it offered to develop tacit knowledge that would hopefully provide a gateway to a career in marine renewables, a sector he had found hard to access.

From the position he is in now, John sees EngD programmes like IDCORE as an excellent way of attracting talented engineers into the industry, allowing someone who has succeeded academically to understand the challenges and get further down their career path. If he could find the right project, he would look to sponsor an IDCORE student himself with DEEP.

Like many others, he found the cohort-based nature of the training extremely valuable, along with the diversity of the group that had been brought onto the programme. They were able to support each other through the intensity of the first year of training and subsequently when they were all out in industry delivering their projects.

However, it is the practical nature of the experience that left the most lasting impression on him – remembering the feeling of sitting on Loch Etive, boiling a kettle to make a cup of tea, using electricity generated by a floating tidal turbine that he had helped to design.



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