Case Study

Luke Evans

Luke's Project

EMEC have had such good experiences with IDCORE students that they agreed to sponsor two students in 2020 despite having only one project specified. Consequently, Luke spent the first part of his project working with EMEC and his academic supervisors to define the work needed.

He is now making great progress in exploring placement and configuration of sensors to monitor tidal turbines, examining potential instrument locations and their impact on measurements of the power curve. Industry standards are currently based on experience from wind turbines. Tidal turbines create very different challenges, particularly the new floating designs.

Luke has just developed and submitted a paper that brings all this work together. He has also provided input to device developers, and his work will form the basis of an uncertainty model that EMEC are looking to develop to more effectively characterise how measurements impact performance estimates.

About Luke

Luke came to IDCORE from a very practical background. After leaving school he did an HND and then a degree in Electrical Engineering. He subsequently worked as a laboratory technician at Caledonian University where colleagues encouraged him to think about doing a PhD.

It was the balance of training and practical work within IDCORE that appealed to Luke. He saw it as a unique opportunity, and he has been using skills gained during the first year throughout his time at EMEC.

> *Orkney is a wonderful community in a unique place. I have family up here and I went to school in Wick, so I was delighted when the opportunity arose to deliver a project for EMEC. It is great to be living and working in a place so dedicated to renewables and to feel that I am making a real contribution to the needs of the industry.*

Feb **22**

> *Luke has developed experience and ability in handling, processing and understanding large and complex datasets that should feed into discussions around the measurement standards for tidal turbines. His project is another example of the importance of reliable and resilient sensing which is a big focus for my own research. It's a real privilege to be able to supervise IDCORE students, the calibre of the students is outstanding – they keep me energised and motivated.*
>
> *Brian Sellar, Academic Supervisor, The University of Edinburgh*

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> *The understanding of uncertainties created by Luke's work is going to be useful to anyone working in turbine performance. This is already being demonstrated by the work he is doing with equipment manufacturers.*
> *All the students we have had from IDCORE have made a significant contribution to our work. They are a high quality resource who can push research ideas, helping us to tap into the knowledge in the academic community.*
>
> *David Darbinyan, Senior Metocean Engineer, EMEC*

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