

Marine renewables – commercial and environmental success

The Sea Mammal Research Unit led the environmental monitoring plan for SeaGen in Strangford Lough. By demonstrating sustainability, the work has allowed the turbine to be licenced for 24-hour operation.

Tidal turbines each have the potential to generate £0.6m pa. Demonstrating the sustainability of this new technology means the industry can grow, generating jobs and growth while contributing to the UK's carbon-reduction targets and energy security.

Partners: Marine Current Turbines (SeaGen), regulators, Sea Mammal Research Unit

The collaboration

NERC-funded research is critical to understand the optimal siting of, and on-going impacts from, marine renewable energy technologies.

In 2006 Marine Current Turbines (MCT) chose Strangford Lough in Northern Ireland to trial SeaGen, its new large, twin-rotor tidal turbine. The lough offers strong tides and sheltered conditions, but is protected under the EC Habitats Directive, so MCT had to commission and adhere to a stringent environmental monitoring plan in order to obtain an operating licence.

The Sea Mammal Research Unit (SMRU) led the environmental impact assessment and provided evidence during the development and early deployment of SeaGen.

The final report, published in February 2012, declared that SeaGen had no major impact on the lough's marine life. The turbine is now allowed to operate throughout a 24-hour cycle.

This study is the first to provide direct information on interactions between seals and marine renewable devices. It has helped 'de-risk' tidal energy, making it more attractive to both regulators and investors.



The UK tidal energy sector is predicted to be worth up to £1bn by 2050. NERC can help MR companies meet regulatory requirements and operate profitably and sustainably, enabling the industry to contribute to the UK's carbon-reduction targets and economic growth.

MCT's David Ainsworth explains the importance of this work to unlocking economic growth in this sector: *'Demonstrating the environmental compatibility of SeaGen is just as crucial as demonstrating its technical and economic viability. A crucial hurdle for the sector is whether its environmental impact is going to be acceptable in the long term. SMRU have played a key role in assembling an evidence base that demonstrates that tidal stream power can be compatible with environmental protection in a highly sensitive location.'*