Marine Current Turbines

Running with the tide of renewable energy

Strangford Lough Experimental Tidal Turbine Proposed Development Newsletter April 2005 – Project Briefing

Marine Current Turbines Limited ("MCT") has been involved in the development of tidal stream energy devices since 1999. These devices convert energy in tidal currents to electricity through the use of slow (10-15rpm) rotating turbines. The development of this clean, sustainable renewable electricity generation technology is of international strategic importance in the quest to harness alternative energy sources to avert global warming, and meet the challenge of fossil fuel depletion.

MCT originally applied to the Environment and Heritage Service in November 2003 for temporary permission to install a single pre-commercial prototype tidal stream energy system in the Strangford Lough Narrows for experimental and environmental development purposes.

This proposal was subsequent to an earlier feasibility study conducted on behalf of DETI, which was to review the potential for generating electricity from tidal stream energy around the coast of Northern Ireland. This project was conducted jointly by KMM, MCT, and Queen's University, Belfast. The report, which is available on the DETI Website, concluded that Northern Ireland is very well endowed with a tidal stream resource, and that it has the potential to make a considerable contribution to the energy mix in the area.

In parallel to this project, MCT was developing the world's first full scale tidal stream energy device, which was installed off the north coast of Devon in 2003. This was a proof of concept device rated at 300KW, which has met all of the design objectives. As a result of this project, it was clear that the pre-commercial prototype system should be installed in a sheltered environment to accelerate development; and should be installed in a location where the interaction of the system with the environment can be carefully monitored. Uniquely for the United Kingdom, Strangford Lough fulfilled both of these key requirements, with the additional benefits of having a grid connection in close proximity to the preferred location, and having an excellent team of marine biologists at the Queens University Belfast Portaferry Marine Biology Station to support the monitoring programme.

In 2004, as plans progressed, MCT contracted Haskoning UK Limited to undertake the environmental impact assessment for the project. The Haskoning team was seen as being eminently suitable for this project, not only for their existing experience in the area, but also the team leader had been a resident of Portaferry and was closely linked to Exploris and the Marine Biology Station.

The Environmental Scoping Report was provided to the EHS in June 2004 and circulated to all of the relevant stakeholders.

Throughout this consultation exercise many government and non government organisations were consulted which included:-

- Association of Strangford Lough Yacht Clubs
- Ards County Council
- Commissioner of Irish Lights
- DARD
- Down County Council
- EHS
- MCA
- Marine Conservation Society
- National Trust
- Northern Ireland Fisheries Protection Office
- RSPB
- Strangford Lough Management Advisory Committee
- The Crown Estate
- Ulster Wildlife Trust

The work associated with the Environmental Impact Assessment report has been extensive and a first draft was provided to the EHS in January 2005. Additional studies are currently being conducted to augment the data provided, and it is expected that a final version will be available in April 2005. These documents will be placed in public places in Strangford and Portaferry for the public to review.

In March 2005 MCT was notified that the application for a £3.8M DTI grant to support the proposed tidal stream project in Strangford Lough had been successful.

On 31st March 2005 the EHS accepted MCT's method and environmental statements for the geological site investigation at the proposed installation location. On 6th April 2005, The Crown Estate granted Marine Current Turbines the consents to undertake the geological site investigation.

MCT fortunately had a small window of opportunity to undertake this site investigation work during the neap tides over the weekend of 16th to 20th April 2005. '*Excalibur*', one of the only vessels capable of conducting a geological site investigation in the depth and strength of current present in Strangford Lough, was available for immediate work and was lying in Liverpool Bay.

Excalibur is scheduled to enter the Strangford Narrows on 16th April and moor in Audleys Roads over night. On the morning of the 17th April 2005 she will position at the proposed installation location, which is approximately 400m east of the sewage plant south of Strangford. It will then commence to extract two 150mm diameter cores 25m deep from the sea bed for laboratory analysis. The results of this analysis will provide information to finalise the foundation and installation design for the system.

MCT is using this opportunity to raise the public profile of the project and will be holding public consultations in both Portaferry and Strangford on Saturday 16th April.

Subject to final consents being granted, Marine Current Turbines Limited plan to install the system in April 2006. The system will be installed for a duration of between two to five years, at which point it will be removed.

The Company is very aware of the environmental sensitivities in the Strangford Lough, and is confident that this proposed experiment will not cause any detrimental effects. Indeed it is a fundamental tenet of the technology that the technology is genuinely sustainable. The operation of the system will be carefully monitored and the impact on the environment assessed by an independent team involving the QUB Marine Biology Station at Portaferry.

The aesthetics of the system are a key part of the design criteria, and the machine has been carefully designed to minimise visual impact through careful use of geometry, and by minimising the height of the structure above the water line. The height of the system is not dissimilar to the structures already present in the Lough (Salt Rock beacon, Gower beacon and Angus Rock lighthouse).

The project is likely to be of great interest worldwide, and it is expected attract international visitors to both Strangford and Portaferry to view the technology, and as a result, it is hoped that this will also bring Strangford, Portaferry, and Northern Ireland to the attention of the international media in a forward looking and positive manner.

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