

# Tidal Energy in the Pentland Firth

*Pre-Feasibility Report*

Management Summary

*'Investigation of the optimum means for harnessing the vast tidal energy potential of the Pentland Firth'*

February 2008

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*If you would like to be involved in the Tidal Master Plan Study, please phone:*

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*This brochure contains a management summary of the report only.*

*The full report is available for download at:*

**www.pentlandalliance.co.uk** and **www.tocado.com**



This work was ordered as part of the socio-economic regeneration programme of the Pentland Alliance, composed of the companies UKAEA Ltd – CH2MHill – AMEC Nuclear, established as a bidding consortium for the Dounreay decommissioning project.



## Management Summary

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The Pentland Firth is arguably one of the best concentrated tidal resources on earth. Estimates of the energy potential in this few square kilometres range from 2GW to 8GW. An objective has been set by public sector agencies and the Scottish Government to harness 1300MW of tidal energy in the Pentland Firth by 2020.

A pre-feasibility study has been prepared by Tocado BV Tidal Energy to identify the tasks required for a Tidal Master Plan Study, which will be the route-map for the accelerated, large scale tidal energy development of the Pentland Firth.

The pre-feasibility study firstly examines and summarises the background and issues involved in the development of a tidal energy industry in the Pentland Firth. Issues analysed include tidal resource, government, grid in Scotland and the tidal industry. The key findings of this analysis include:

- The tidal resource information available on the Pentland Firth is not of sufficient detail to allow site selections to be made and further detailed measurements and modelling will be required.
- The UK Government, Scottish Government and government agencies have many roles to play in the development of the tidal energy industry, from consenting routes to marine energy support schemes to Caithness economic regeneration.
- The grid in Scotland is weak and requires major reinforcements and upgrades. The current policy associated with obtaining grid connection agreements will not permit any tidal energy developments over 5MW in the Pentland Firth before 2016.
- The tidal energy industry is still in its infancy and remains device orientated.

Based on the key findings above, the tasks to be

undertaken by the Tidal Master Plan Study are discussed in the pre-feasibility study. Tasks are detailed under the headings of:

- *Tidal Development*  
detailed surveying and mapping of the tidal resource in the Pentland Firth, roll-out strategies, development issues such as mooring and environmental impact studies.
- *Government*  
identifying strategic tasks for the Scottish and UK Government to undertake to help develop the tidal energy industry; these include seabed leasing policy and support mechanisms.
- *Utility Companies*  
looking at grid development and power transmission related issues, both overland and sub-sea, and looking at an alternative to transmission.
- *Industry*  
developing a blueprint for tidal energy development in the Pentland Firth.

The successful implementation of the Tidal Master Plan Study will require the joint working of Government – Utility – Industry (the Stakeholder Triangle). This joint working will be key in the development and implementation of the tidal energy industry in the Pentland Firth.

The next step is to hold a stakeholder workshop, with a cross-section of pro-active stakeholders from Government, Utility and Industry, to establish the Group which will take forward the Tidal Master Plan Study and to achieve a consensus on the tasks, programming and financing.

There is a major social and economic opportunity for Caithness through the development of a tidal energy industry and a ‘Local Energy Added Value’ industry. However this opportunity must be grabbed, otherwise it will be lost to another country.

**Tocado BV Tidal Energy**  
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**The full report can be downloaded at:**

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