



Councillor Angus Campbell, Leader of Comhairle nan Eilean Siar
Local Authority for the Outer Hebrides of Scotland

LOW CARBON OPPORTUNITIES IN ISLANDS A Hebridean Perspective

THE OUTER HEBRIDES – AN ARCHIPELAGO ON THE EDGE OF EUROPE, AMBITIOUS FOR GROWTH

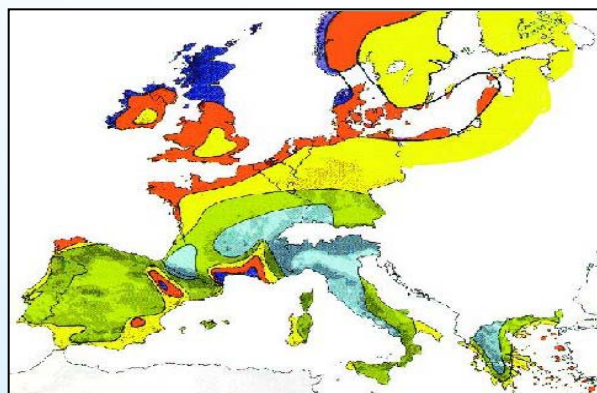




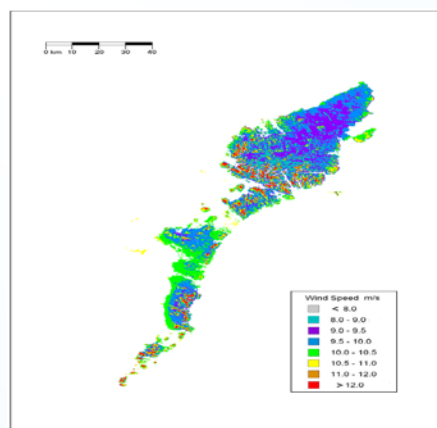
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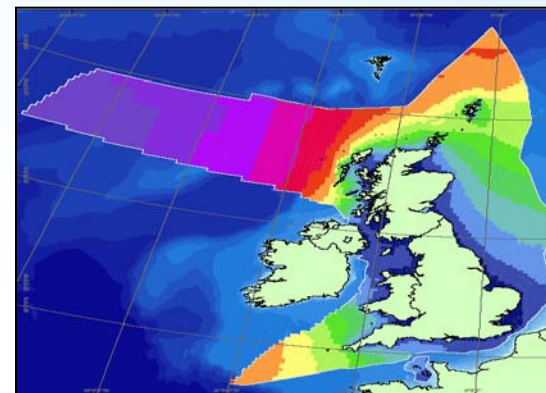
The Renewable Energy Resource



Wind Resource Europe



Wind Resource Hebrides



Marine Resource Hebrides

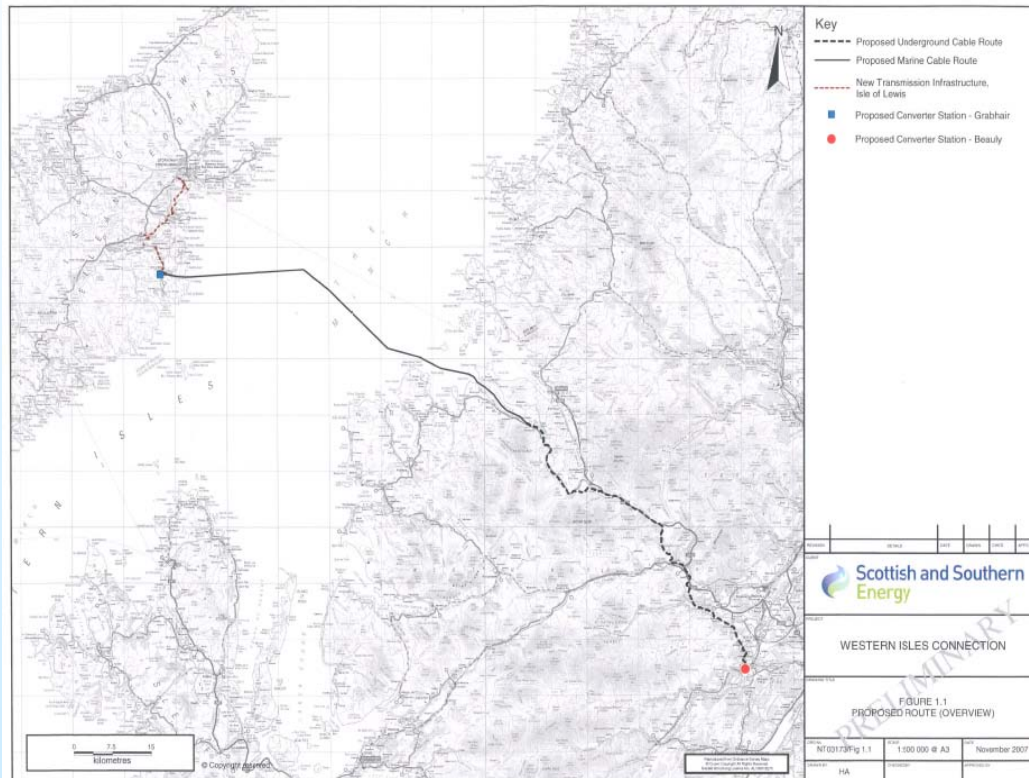
An unrivalled resource, on and offshore, which is key to meeting Scottish, UK and European targets. *"Access to this resource is in the National Interest"* (John Swinney, Scottish Cabinet Secretary for Finance and Sustainable Growth).



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Grid Connectivity (proposed)



450MW Radial Connector proposed between the Main Interconnected Transmission System and the Outer Hebrides – 80km subsea and 76km underground.

Upgrade capability to 900MW.

Requires developers seeking connection to accept underwriting liabilities for €472m cost.

If underwriting is confirmed this year, the interconnector can be live by October 2015.



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LOW CARBON OPPORTUNITIES IN ISLANDS **A Hebridean Perspective**

The Outer Hebrides Generation Portfolio

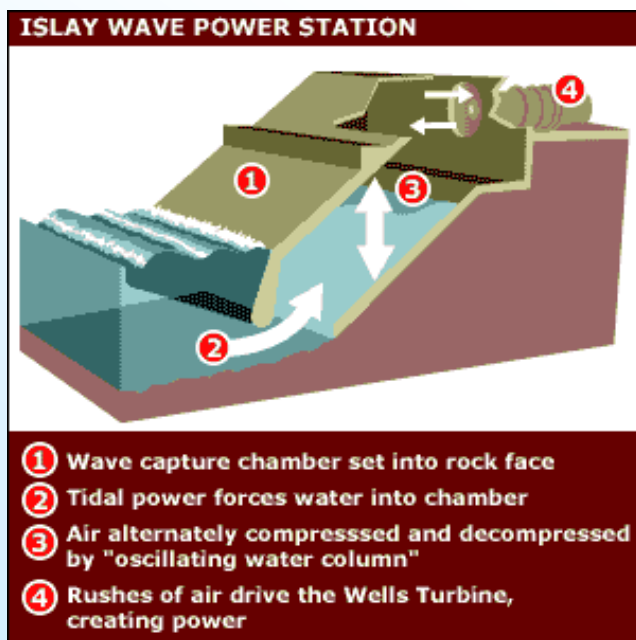
- in excess of 400MW of Onshore Wind operational (distribution connected), consented, in planning or in advanced development
- significant constraints in the form of Natura Environmental Designations – scope for further Onshore Wind limited
- 50MW of seabed leases recently awarded by The Crown Estate, owner of the UK seabed
- scope for 1GW+ of Marine and Offshore Wind generation around the Outer Hebrides by 2025



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The Marine Energy Opportunity (in detail)



Wavegen's Oscillating Column Wave Energy Converter – onshore turbine driven by compressed air.
4MW installation at Shader, Lewis consented, upgradeable in modules to 10MW



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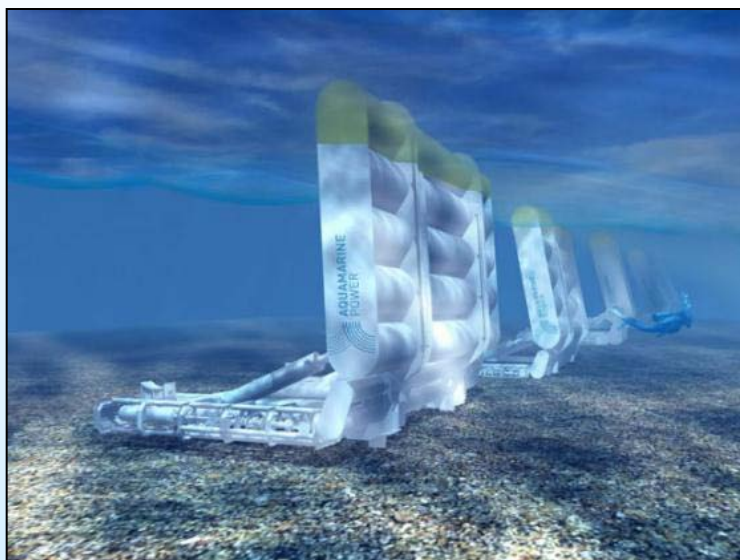
Pelamis' 'Sea Snake' wave energy converter – a series of tubular sections joined together. Kinetic energy in the joints generates electricity. Subsections already fabricated in Lewis.



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Aquamarine's Oyster – a massive hinged flap driven by the waves. Water piped onshore at high pressure to drive a conventional hydro turbine. Subsections already fabricated in Lewis.



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The Marine Energy Opportunity (in detail)



Statoil's Hywind 2 floating offshore wind turbine. Operational in deep water, anchored by chains to the seabed. 600MW possible in one installation.



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Other Low Carbon Opportunities

- investment in Onshore Wind by the Local Authority and retail of electricity at cost through an Energy Supply Company
- production of Hydrogen as a transport / heat fuel
- wind + Water = Hydrogen and the Outer Hebrides have the strongest wind regime and highest rainfall in Europe
- use of biofuels in the freight and transport sector
- biomass – constrained by a lack of feedstock in the islands and dependent on a carbon heavy import process

We are actively seeking European partnership under the €50bn 'Connecting Europe Facility for Transport, Energy and ICT'. €9.1bn is available for 'Trans European Energy Infrastructure' – a subsea Grid down the west coast of the UK and into Europe?



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Like many European islands, the Outer Hebrides face significant structural challenges:

- decline of traditional industries
- the additional costs of insularity – it costs more to achieve the same
- loss of population (10% outward movement in 10 years)
- over dependence on a shrinking public sector
- rampant Fuel Poverty levels and dependence on Fossil Fuels

BUT, Renewable Energy can turn the tide and can be transformational for a closed island economy:

- fabrication opportunities at Arnish Point, Stornoway
- research opportunities at Lews Castle College
- millions of Euros invested in local communities
- self determination and self reliance
- ambitious for growth

THE PRIZE IS TOO GREAT TO BE MISSED!