



**MREDS - MARINE
RENEWABLE ENERGY
DEVELOPMENT IN
SCOTLAND**

MREDS – a brief overview For the MASTS/MREDS Workshops

20th-23rd October 2010





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RENEWABLE ENERGY
DEVELOPMENT IN
SCOTLAND**

**PROFESSOR
LORD WALLACE
OF TANKERNESS**

**Formerly Deputy
First Minister**

“The launch of MREDS is a further significant milestone in the development of Scotland and Orkney’s marine renewables potential.

“By bringing together leading figures in industry and academia, and covering a range of important complementary work streams – including lessons to be learned from experience in the oil and gas industry – this project will serve to nurture a sector vital for all our futures”



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IAN JOHNSTONE

Orkney Islands Council

**Statement of Council Policy from
Reserve Fund Consultation**

**“To establish Orkney as a global leader
in commercial and academic marine
energy research, development and
commercialisation activity across a
wide range of technologies and
disciplines (building on existing
capability where appropriate)”**





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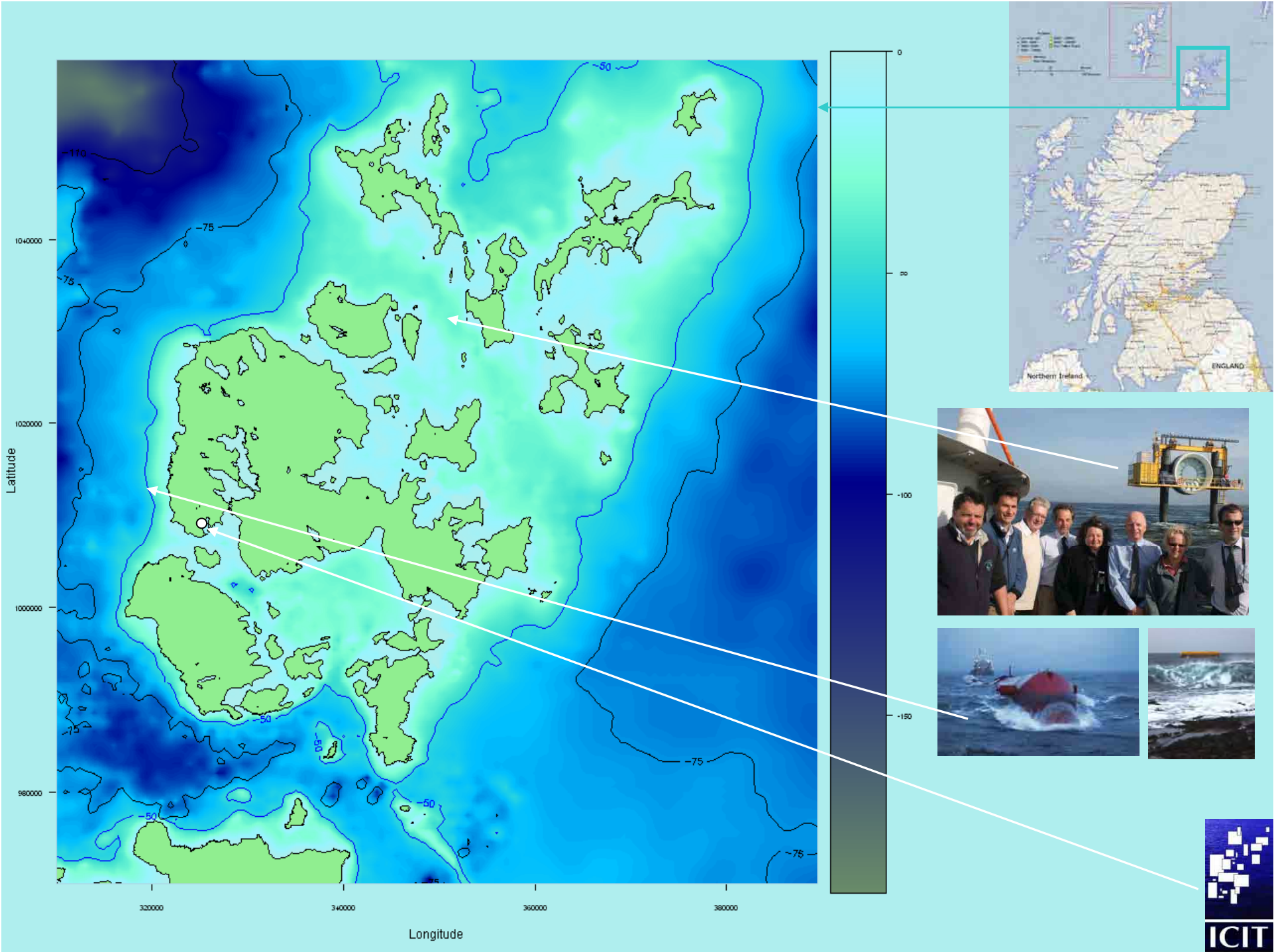
ELAINE HANTON

Highlands & Islands Enterprise

HIE Network, Renewable Energy Position Statement

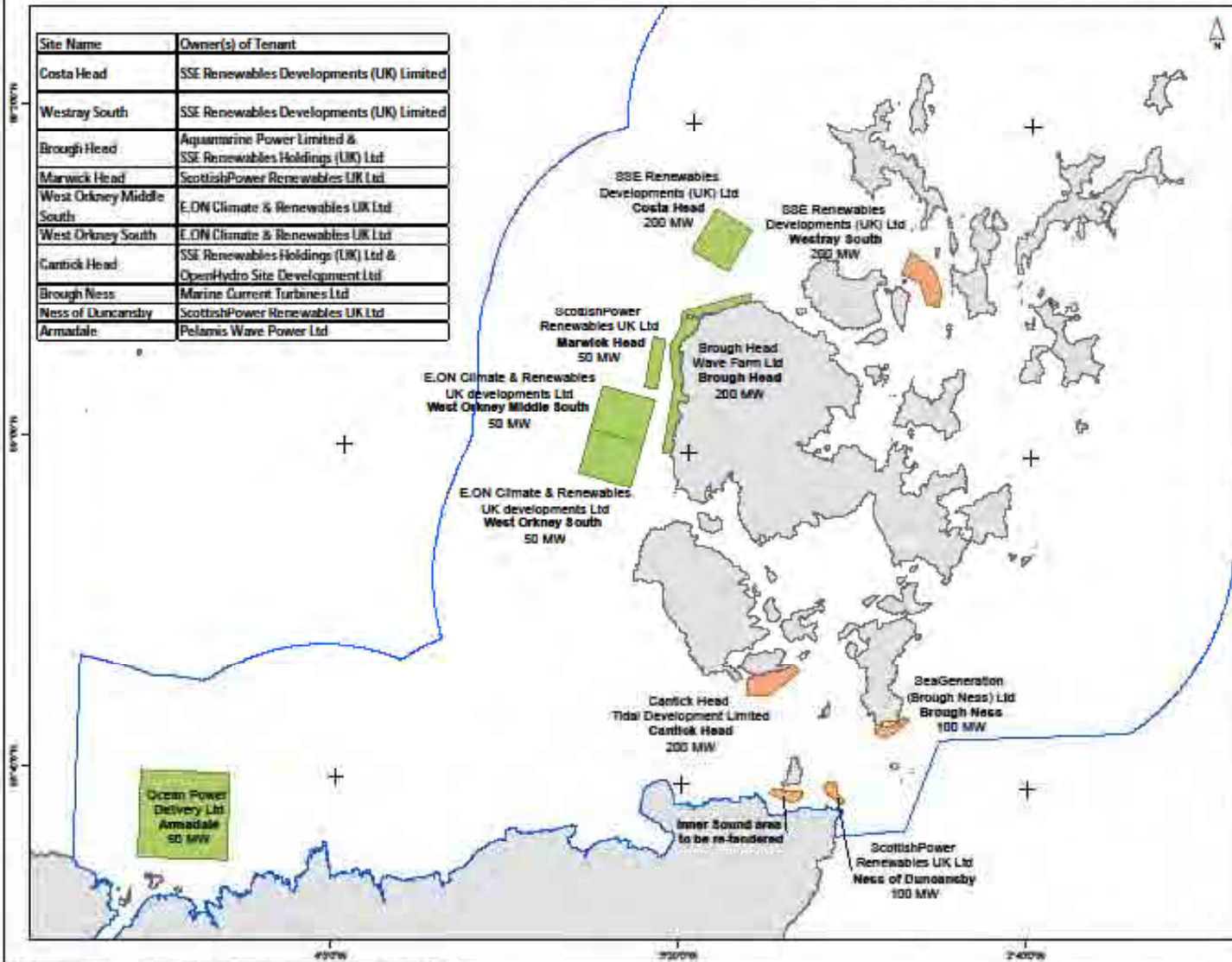
“The *Highlands and Islands Enterprise* (HIE) network believes that renewable energy currently offers the Highlands and Islands a critical, but time-limited opportunity to develop a world leading industry which could offer the area significant long-term and sustainable economic and social benefits.”





Pentland Firth and Orkney Waters Round 1 Development Sites

Site Name	Owner(s) of Tenant
Costa Head	SSE Renewables Developments (UK) Limited
Westray South	SSE Renewables Developments (UK) Limited
Brough Head	Aquamarine Power Limited & SSE Renewables Holdings (UK) Ltd
Marwick Head	ScottishPower Renewables UK Ltd
West Orkney Middle South	E.ON Climate & Renewables UK Ltd
West Orkney South	E.ON Climate & Renewables UK Ltd
Gartick Head	SSE Renewables Holdings (UK) Ltd & OpenHydro Site Development Ltd
Brough Ness	Marine Current Turbines Ltd
Ness of Duncansby	ScottishPower Renewables UK Ltd
Armadale	Pelamis Wave Power Ltd



- Development Sites**
- Tidal
 - Wave
 - Strategic Area
 - United Kingdom
 - Europe

MaRS
Marine Resource System

Round 1 Development Sites
29 March 2010

0 4 8 16 Kilometres

1:500,000 Author: KR
Size: A4 GA: JM

Footnote shown relative to WGS 84
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THE CROWN ESTATE

BACKGROUND AND RATIONALE: We can report substantial progress and optimism regarding the development of the marine renewables sector, but...

- There is a significant fragility surrounding export infrastructure, and other externalities which may constrain development/developers in the region.
- Many designs/projects being led by highly-driven, highly-motivated, but undercapitalised SMEs.
- The capacity of the region to support the necessary R&D for Scotland to become a world-leader in these technologies is limited.

OVER-ARCHING OBJECTIVES OF THE MREDS PROGRAMME:

- Seeking innovative short, medium and long-term solutions to development constraints. (*Workpackage 1*)
- A broad-scale cross fertilisation between the offshore petroleum and marine renewables sectors. (*Workpackage 2*)
- Seeking to identify and propose solutions to the management of development risk. (*Workpackages 3 and 4*)
- Seeking to ensure that environmental and social issues are tackled proactively and to the satisfaction of stakeholders. (*Workpackages 5 and 6*)

MREDS – THE WORKPACKAGES:

Workpackage 1: Export Constraints, Externalities and Opportunities

Workpackage 2: Petroleum and Renewables

Workpackage 3: Risk Mitigation, Minimisation and Management

Workpackage 4: Hydrodynamics, Moorings and Foundations

Workpackage 5: Environmental and Ecological Impacts

Workpackage 6: Socio-economic values and responses

EXISTING COLLABORATIONS:

**UHI Millennium Institute, Strathclyde, Edinburgh, Queens University
Belfast, Sheffield, Stanford University and 18 European Institutes**

Objective: to determine the likely environmental impacts from marine energy converters and propose mitigative measures, and methods of measurement/ monitoring, for these.

- **SRDG funding from the Scottish Funding Council:**
 - focussed research on the effects of MEC influence on the behaviour/mechanics of the ecosystem: the biotopes, benthos, the infralittoral/littoral and coastal regimes, and fisheries, **Heriot-Watt University** jointly with **UHI Millennium Institute**.
- **Other funded studies include:**
 - EPSRC SuperGen Marine project on environmental monitoring, Heriot-Watt jointly with Queens University Belfast.
 - *Total Fondation* and *Total E&P Aberdeen*, supported research on monitoring of diving birds, with RSPB and EMEC.
 - 2 PhD funded studentships funded by EPSRC and HIE, jointly with UHI Millennium Institute.
 - MAREE major investment in research within UHI Millennium Institute

Objective: To understand the potential socio-economic hurdles to the development of marine renewables and identify pathways to overcome these difficulties.

EU FP7 Project MESMA – Heriot-Watt University jointly with 18 European Institutes with a focus on Marine Spatial Planning, with the Pentland Firth and Orkney Waters as a case study within the project.

Aquatera sponsored PhD studentship – legal aspects of marine spatial and environmental planning – comparing US, Europe and Scotland.

But also with UHI Millennium Institute, within the SRDG:

First Stakeholder Workshop, November 2009 – report available

Second Stakeholder Workshop, 6th December 2010 (with support from SNIFFER)

Major contributions to this week's workshops.

THE NEXT THREE DAYS:**Aims:**

To provide a lead in developing these key research areas, and an open forum for this, for the Scottish academic community involved in research in marine science and marine planning;

To determine the appetite for large collaborative project proposals from this community in the fields of:

- MARINE RENEWABLES AND THE ENVIRONMENT
- MARINE SPATIAL PLANNING
- MARINE MAPPING

To progress new initiatives within MASTS/MREDS and seek other funding opportunities, possibly a large multi-institution programme seeking funding from SFC and other sources
