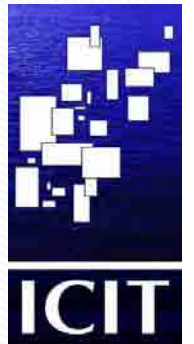


Planning for Marine Energy: Research Opportunities

Dr Sandy Kerr
International Centre for Island Technology
Heriot-Watt University
Orkney Campus

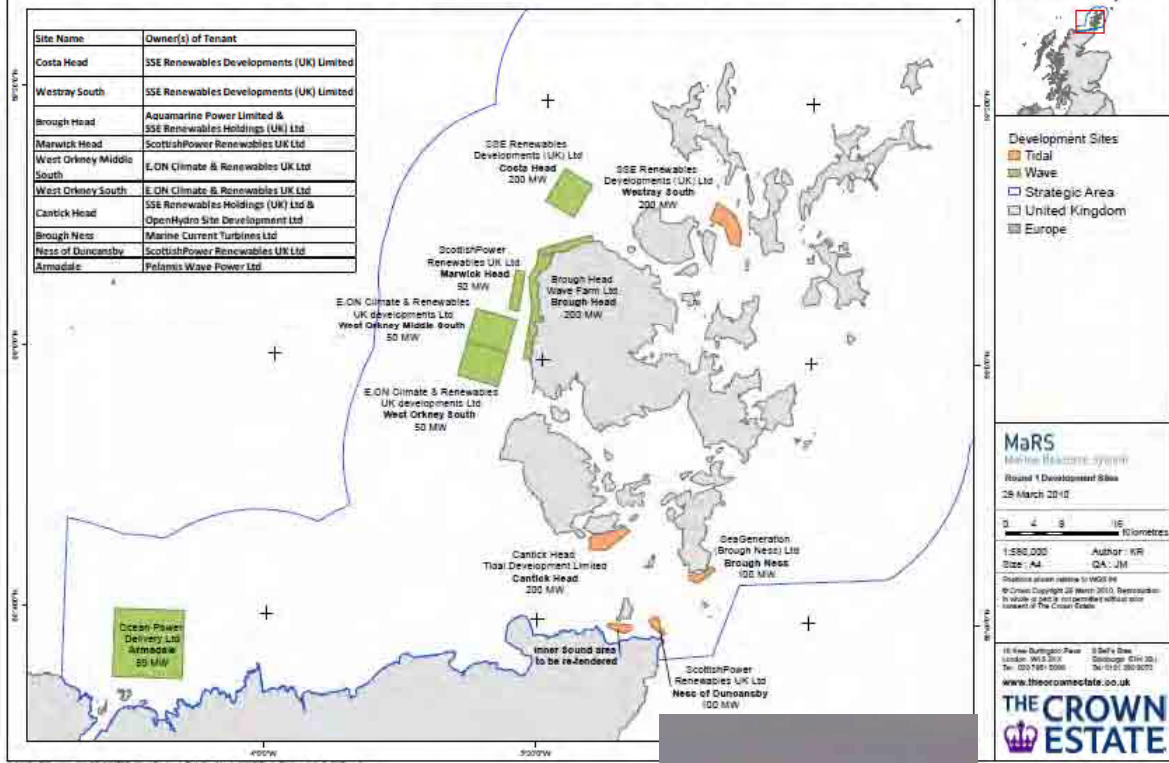
Exploring Science and Society

- VALCOAST:- The Role of Value Conflict Assessment Techniques in the Formulation of Implementable and Effective Coastal Zone Management Policies
- INCO-DC Project - Appropriate Marine Resource Management and Conflict Resolution in Island Ecosystems
- Scapa Flow Management Strategy
- Project Fisher – ESRC
- MESMA FP7 – Marine SMAs Pentland Firth case study
- Corrine Sinclair PhD – Legislative review



The Scale of Development

Pentland Firth and Orkney Waters Round 1 Development Sites



- 20/20 VISION
- 14 GW Wave (HIE 2010)
- 7.5 GW Tide (HIE 2010)
- 5,300 Jobs (Scottish Gov)
- Pentland Firth 1.2GW





*Wave and Tidal Energy
in the Pentland Firth Area
- how much environmental monitoring is
enough?*



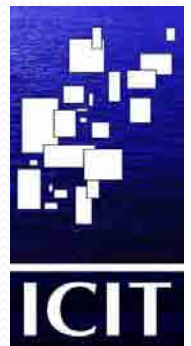
**SRDG Workshop
Cowan House Inverness
1st December 2009
9:30am-4:00pm**



1st SRDG Workshop December 2009



- + 50 attendees
- Industry
- Regulators
- NGOs
- Academics





*Wave and Tidal Energy
in the Pentland Firth Area
- how much environmental monitoring is
enough?*

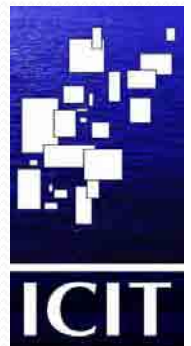


**SRDG Workshop
Cowan House Inverness
1st December 2009
9:30am-4:00pm**



1st SRDG Workshop December 2009

- Tidal energy monitoring
- Wave energy monitoring
- Who should do it?



1st SRDG Workshop December 2009: outcomes

- Wave Tidal energy monitoring
- Relatively little discussion on what to monitor!
- Instead:
 - Lack of clarity over terminology
 - Perception of lack of guidance
 - Scale of baseline targeted or general/broad
 - “Deploy and Monitor”
 - Who is setting the agenda and why?
 - Differentiation MEC effects from other activities

<http://www.mreds.co.uk/>



The poster features the ICIT logo in the top left and the eri logo in the top right. The main title is "Wave and Tidal Energy in the Pentland Firth Area" with the subtitle "- how much environmental monitoring is enough?". Below the title is a collage of images including a pink sea urchin, a group of people, and a large orange structure. The event details are: "SRDG Workshop, Cowan House Inverness, 1st December 2009, 9:30am-4:00pm". A second collage of images shows a boat, a blue buoy, a red boat, and a globe. Logos for Heriot Watt University, Scottish Funding Council, HIE, and the Millennium Institute are at the bottom. The background of the poster is a stylized wave graphic.

ICIT

eri

*Wave and Tidal Energy
in the Pentland Firth Area
- how much environmental monitoring is
enough?*

SRDG Workshop
Cowan House Inverness
1st December 2009
9:30am-4:00pm

HERIOT WATT UNIVERSITY

Scottish Funding Council

HIE
Highlands and Islands Enterprise
Economic, social, cultural and environmental

U
Millennium
Institute

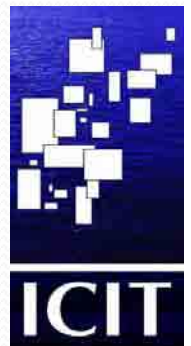


1st SRDG Workshop December 2009: outcomes

- Responsibilities for monitoring
- Key discussion points
 - Near and far field monitoring
 - Data sharing needed
 - No consensus about how to manage data sharing needs facilitation
 - Standard protocols required
 - Existing sea users not burdened with this responsibility

<http://www.mreds.co.uk/>

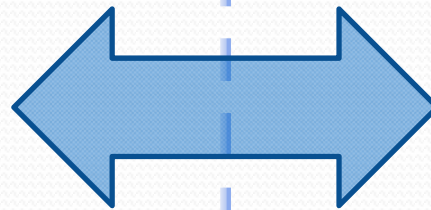
The poster features the ICIT logo in the top left and the 'eri' logo in the top right. The main title is 'Wave and Tidal Energy in the Pentland Firth Area' with the subtitle '- how much environmental monitoring is enough?'. Below the title is a horizontal strip of four images: a pink sea urchin, a group of people, a boat, and a close-up of a mechanical part. The text below the images reads 'SRDG Workshop Cowan House Inverness 1st December 2009 9:30am-4:00pm'. At the bottom, there is another horizontal strip of four images: a boat, a blue buoy, a boat, and a globe. Logos for Heriot Watt University, Scottish Funding Council, HIE (Highlands and Islands Enterprise), and the 2011 Millennium Institute are displayed at the bottom. The background of the poster is a blue and white wave pattern.



Marine & terrestrial characteristics

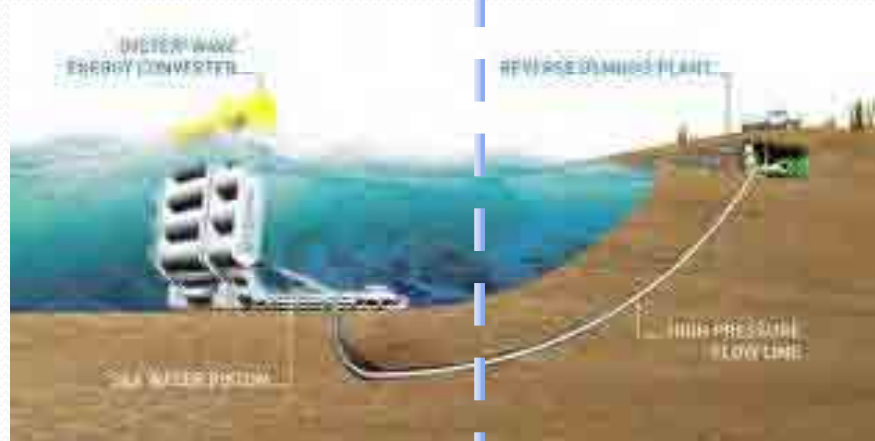
Key Marine Characteristics

- Many resource are mobile
- Multiple users
- Existing historic rights
- No market in property rights
- High level of naturalness
- Centralized planning system??



Key Terrestrial Characteristics

- Resource are fixed
- Single occupier
- Established system of property rights and a market
- High level of modification
- Devolved planning system



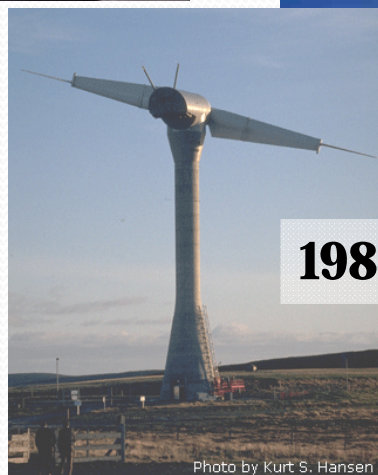
Understanding perceptions.



1955



1984



meeting.

at **25 years ago**
Thursday, November 29, 1984
Design award for windmill — The 300 kw wind generator on Bugar Hill, Evie, has won a design commendation for its owners, James Howden & Co Ltd, from the Association for the Protection of Rural Scotland.

The generator was entered for the competition by the North of Scotland Hydro Electric Board, and the award was handed over by the APRS patron the Duke of Atholl at a ceremony in Edinburgh on Tuesday.

Chairman of the panel of Assessors, Mr Antony Wolffe, MBE RIBA, said: "This beautiful looking machine not only is meritorious in its own right as a design, but is desirable as a way of producing energy without offensive by-products.

"Its placing almost on a hilltop shows sensitive siting and adds to the Orkney scene an object of beauty, usefulness and considerable interest. Messrs Howden & Co. who are responsible for its design and erection are to be congratulated on their initiative."

Teachers' strike — Teachers in Orkney, members of the Educational (ETS), will be taking



Understanding perceptions.



Sustainable Shetland - Home - Windows Internet Explorer

Home About Us Contact Resources Join Us Press Facebook

How to object to Viking Energy

Viking Energy have reactivated their plans to build one of the largest wind farms in Europe, right in the middle of the central mainland of Shetland. We believe that project presents an unacceptable risk to both our environment and Shetland community funds.

Objections should be sent to the Energy Consents and Deployment Unit to arrive by Friday 19 November 2010. The first Viking wind farm planning application in 2009 attracted **2026 objections**, (and just 118 letters of support). If you didn't object first time around - now's your chance. If you did object before, technically in anti-stand, but your objection may have been based on the old planning application, if it is allowed that you **restate your objection**, and adapt it to take account of imposed windfarm changes.

When you send your objection, remember to include:

- Your name
- Your address
- Development is "Viking Energy windfarm"
- Your personal reasons for objecting, a couple of lines is ok!

In the meantime, here are the Energy Consents Unit details.

Only when the Viking Energy wind farm is put permanently out of harm's way, can our community truly come together again, and we can all work together for a more sustainable Shetland, not just for electricity supply, but also transport, housing, food and economy.

First major UK birds and wind farm study
26.9.09, RSPB Scotland, Scottish Government, Scottish Natural Heritage, and the Scottish Mountaineering Trust

Mointeach gun Mhuileann - Moorland without Turbines

2004 Archive

APPLICATION REFUSED APRIL 2008

In 2004 Lewis Wind Power, a partnership between AMEC and British Energy applied to build a 234 turbine 302MW windfarm stretching across the three most remote Lewis islets, Calvea, Eilean, Barvas Eata and Kilmoray Trust Beale. The majority of the proposed windfarm infrastructure fell within the boundaries of the 'Lewis Peatlands' Special Protection Area, and RAMP24 site, one of the largest and most critical known areas of peatland in the world.

Orkney Skyline Concern
www.orkneyskylineconcern.org.uk

Register Here | Contact Us

Our mission statement

Orkney Skyline Concern (OSC) is an organisation aiming to provide a public voice for local communities to help safeguard the visual quality of our Orkney landscape.

Our objective is to protect Orkney's iconic low-lying landscape and open skyline from intrusive and badly sited wind energy developments.

OSC favours a balanced and sustainable renewable energy strategy for Orkney and will seek to ensure appropriate and sensitive sitings of proposed wind turbines.

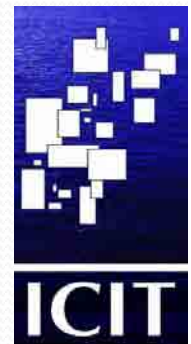
OSC supports renewable energy development which delivers genuine and transparent community benefits.

We seek to protect Orkney's admired brand image, our vibrant economy, renowned landscape, unique heritage and lifestyle.

Show your support by joining OSC, membership is free and the membership list is private.

What are the issues?

- visual impact
- environment
- ownership



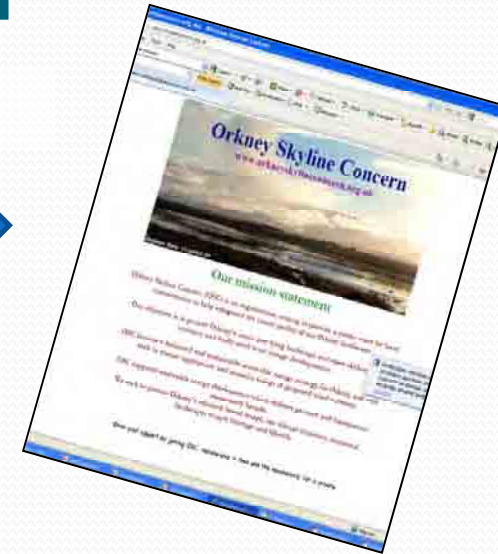
Understanding perceptions



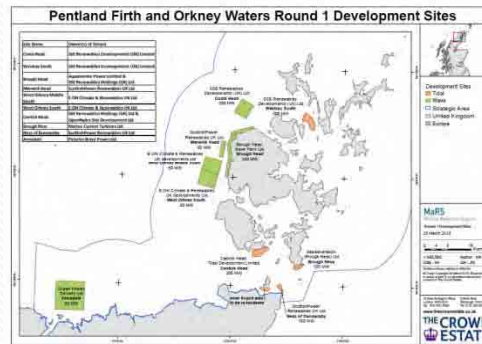
1984



2010



2010

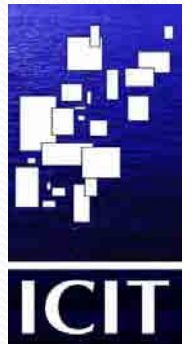


What are the Research questions?

- "Imagined" futures
- Seascape
- Ownership
- Community involvement
- Involvement in decision making

Areas for Research

- Managing information
 - Common understanding
 - Protocols and standards
 - Ways to share data
- Terrestrial/sea interface
- Understanding stakeholder perceptions



Planning for Marine Energy: Research Opportunities

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International Centre for Island Technology
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