



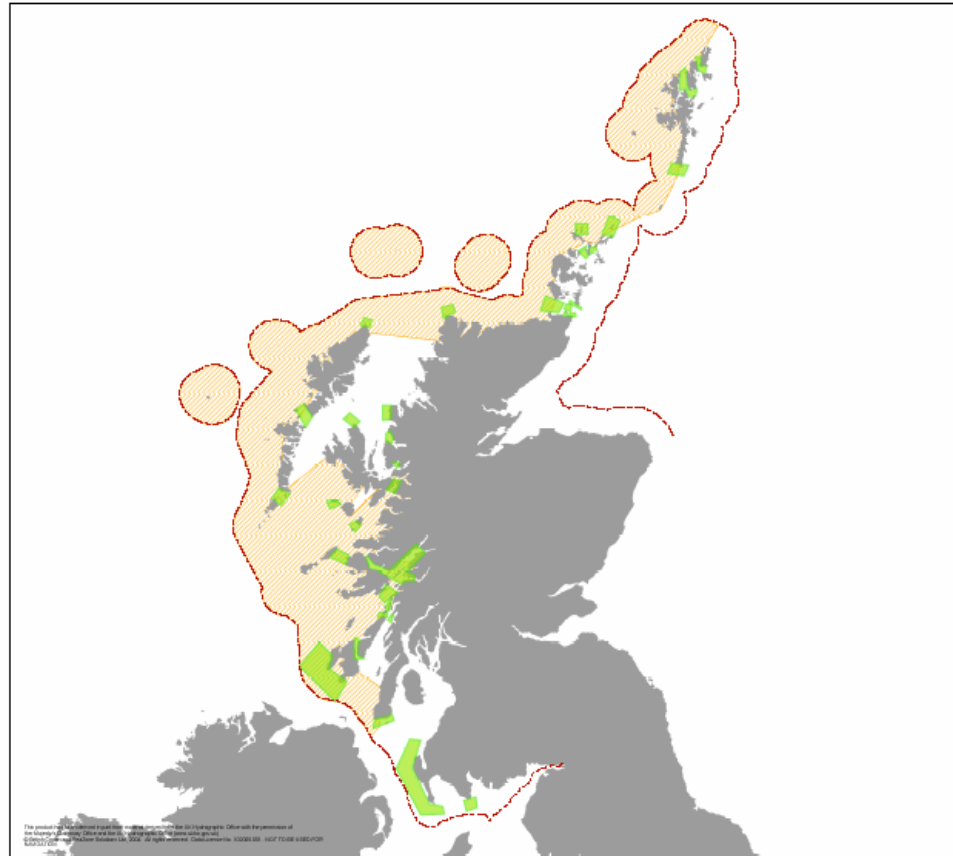
Wave & Tidal Renewable Energy SEA

BWEA28,
Glasgow

10th October 2006

David Wotherspoon,
Metoc

www.seaenergyscotland.co.uk

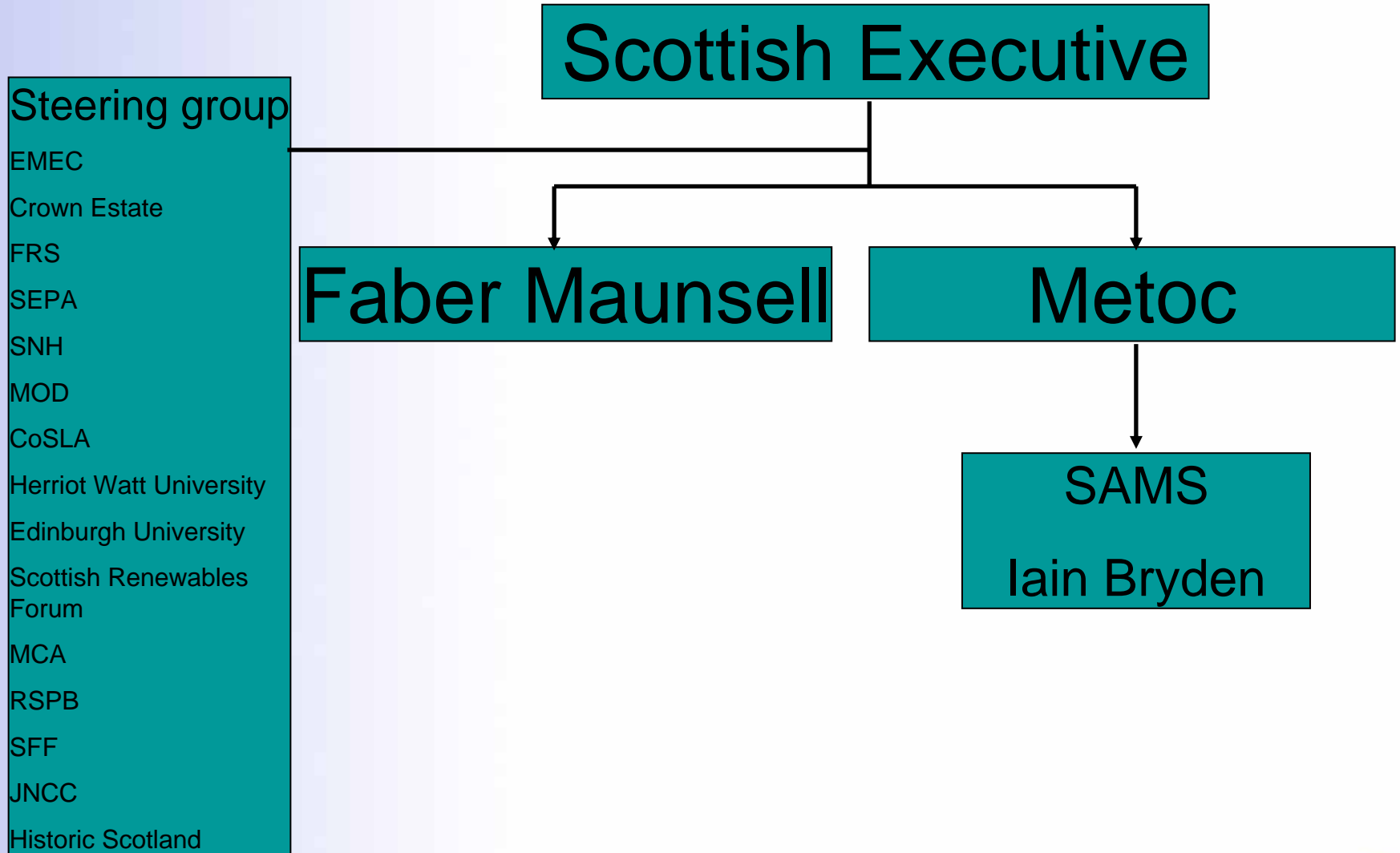




Introduction

- The context of the SEA
- The SEA process and how it relates to this SEA
- Summary of scoping exercise
- Where we are now?
- Gaps in knowledge
- Assessment methodology
- Project timescales

Project organisation





Context

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Policy context

- Kyoto Protocol
- EU Directive “The Promotion of Electricity from Renewable Energy Sources in the Internal Electricity Market” (2001/77/EC)
- The Scottish Executive: 40% of electricity generated in Scotland by 2020 should come from renewable sources
- Marine Energy Group Report (MEG): Opportunity for 1300MW of marine energy capacity to be installed in Scottish waters
- Scottish Renewables Obligation
- SEA Directive - European Directive 2001/42/EC



Objectives

- To assess, at a strategic level, the environmental effects of deploying wave and tidal energy devices in Scottish waters
- To advise and support the Scottish Executive in the development and implementation of its marine renewable energy strategy and planning guidance
- To inform the project-level decision-making process for all stakeholders (to include regulator and developer)
- To facilitate focused investment into the marine renewable energy sector in Scotland.

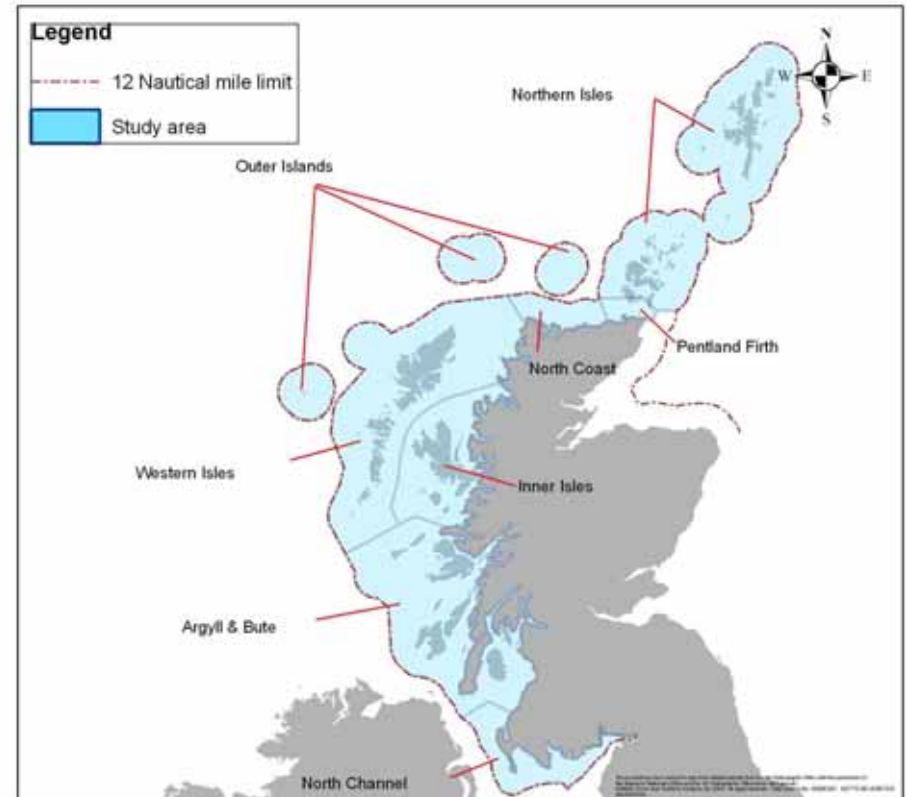


Project Scope

- Geographical extent – Western and northern Scotland out to 12 nautical mile limit
- Devices – wave and tidal
- Development scale – commercial

Exclusions

- Offshore wind
- Tidal barrage





The SEA Process

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SEA requirements and guidance

- SEA Directive - European Directive 2001/42/EC
 - Objective: To provide a high level of protection to the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development
- Guidance on SEA published by ODPM (DCLG) in September 2005
- Environmental Assessment of Plans and Programmes (Scotland) Regulations



The SEA process

<p>Stage A: Setting the context, establishing the baseline and deciding the scope</p>	<p>Review of marine technologies; review of marine resource areas; identification of baseline information and data; identification of potential environmental effects; development of assessment method; production of scoping report; consultation exercise; identification of gaps in information and knowledge</p>
<p>Stage B: Developing strategic alternatives and assess the effects</p>	<p>Finalise assessment method; development assessment criteria; undertake assessment; outline mitigation measures; monitoring recommendations</p>
<p>Stage C: Preparing the environmental report</p>	<p>Reporting of stage C</p>
<p>Stage D: Consulting and decision making</p>	<p>Consultation on SEA report Output: tool to aid development of plans and programmes</p>
<p>Stage E: Monitoring and implementation of the plan</p>	



SEA Topics

Marine Physical Environment

Bathymetry

Geology and sediment transport

Marine processes and hydrography

Sediment contamination and water quality

Marine Biological Environment

Protected sites and species

Benthic and intertidal ecology

Fish and shellfish

Birds

Marine mammals

Human Environment

Cables and pipelines

Marine archaeology and wrecks

Oil and gas infrastructure

Commercial fisheries, shell fisheries and aquaculture

Military exercise areas

Dumping areas

Aggregate extraction

Shipping and navigation

Recreation and Tourism

Other

Noise

Air Quality

Electric and magnetic fields

Landscape, seascape and visual



Scoping



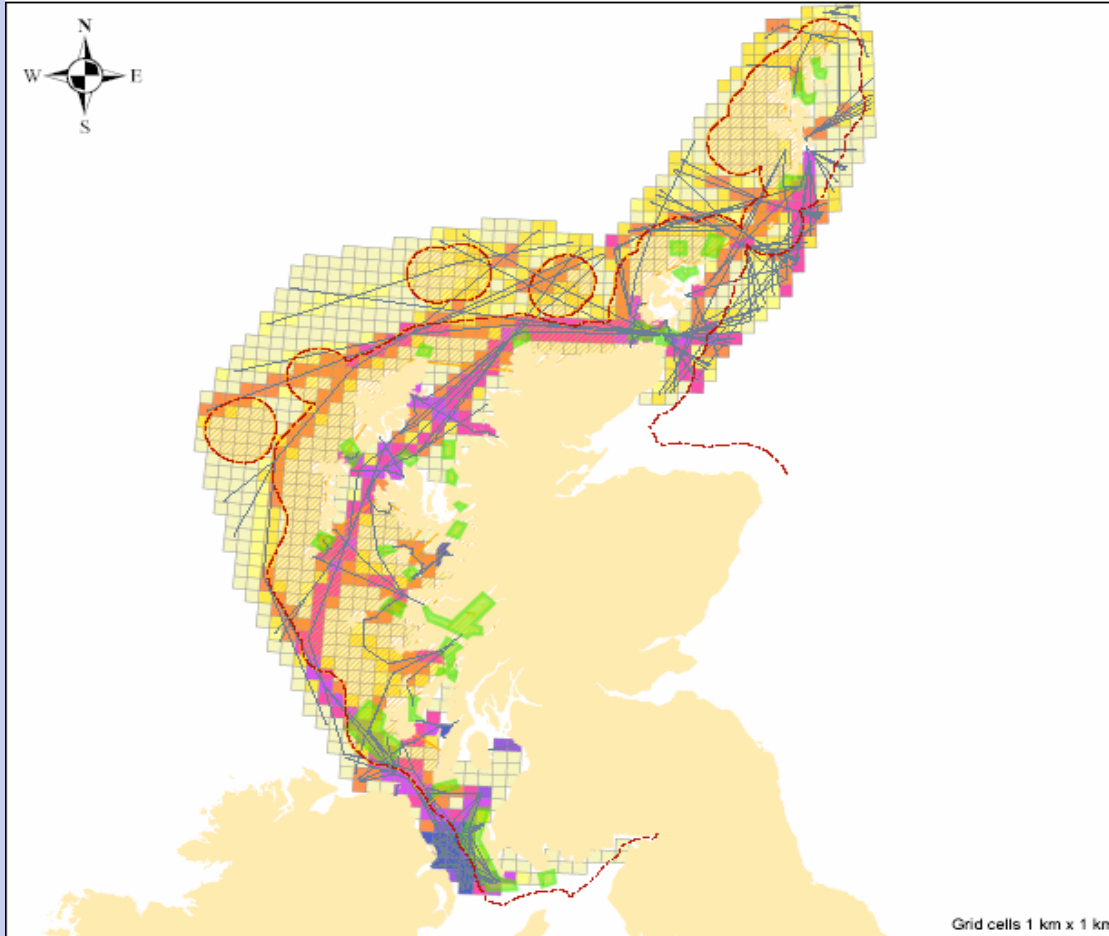


Scoping Report

- Characteristics of device categories
- Data sources and summary of characteristics of baseline environment
- Potential effects of marine renewable devices on the baseline environment
- Gaps in information
- Proposed assessment method
- Outline of development scenarios to be assessed



Navigation



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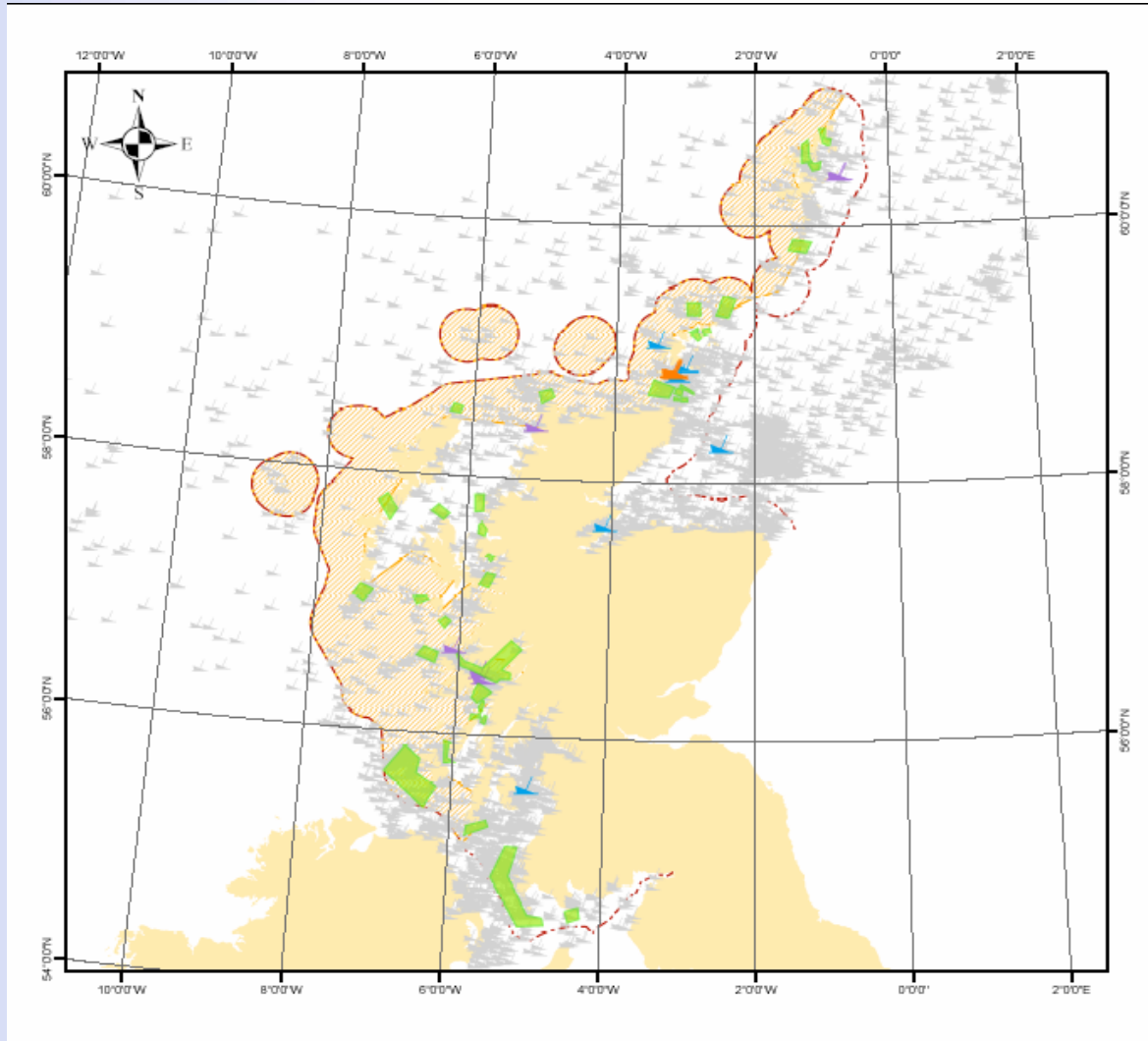
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Marine Archaeology



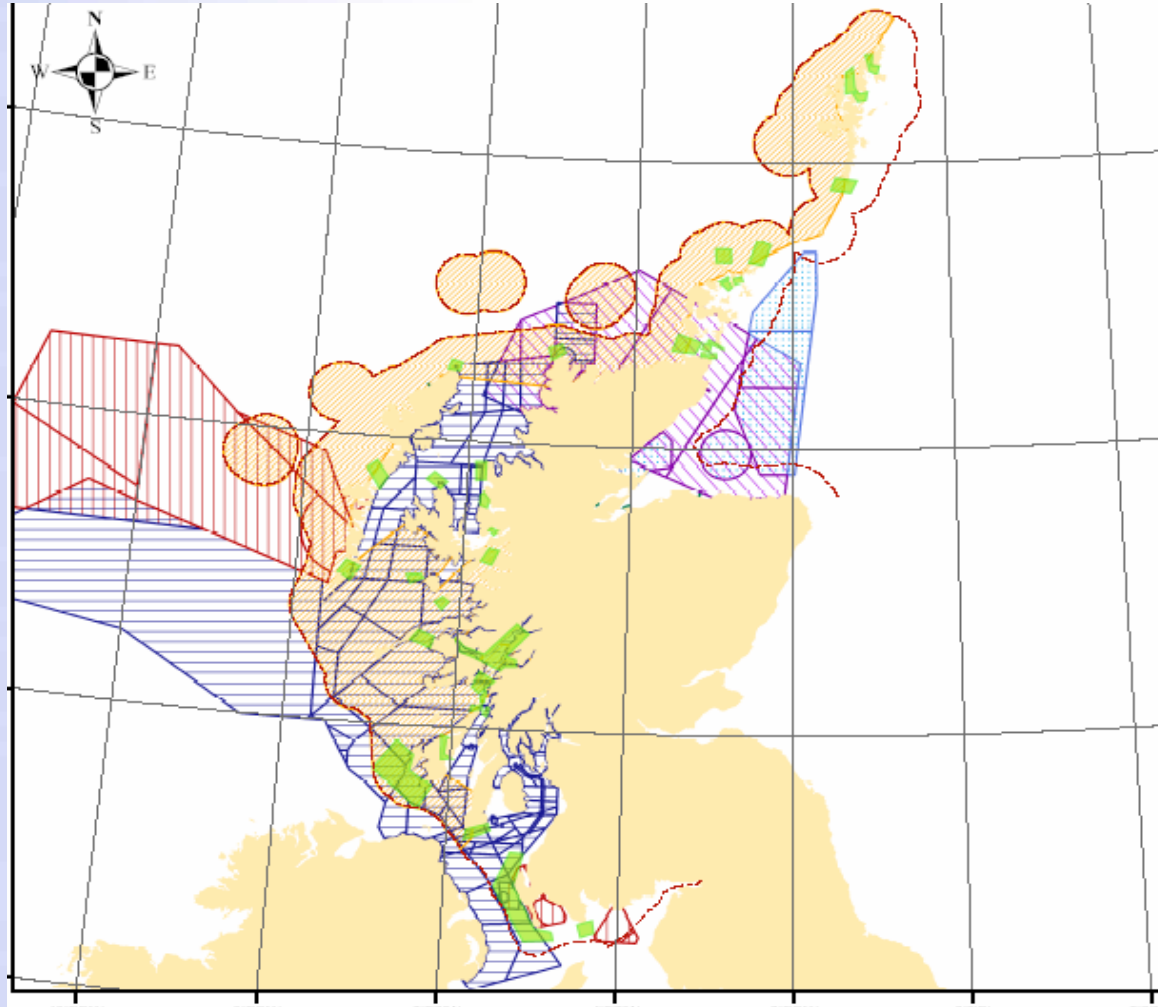
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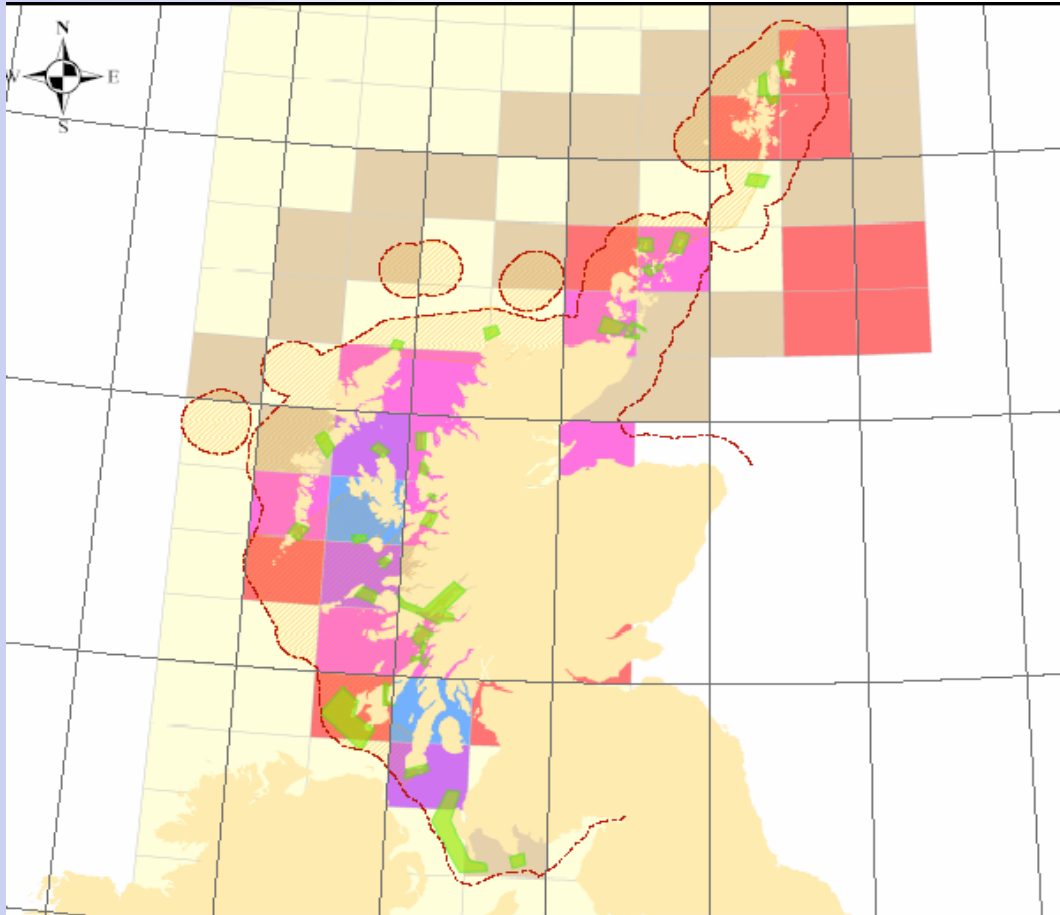
MOD Exclusion Zones



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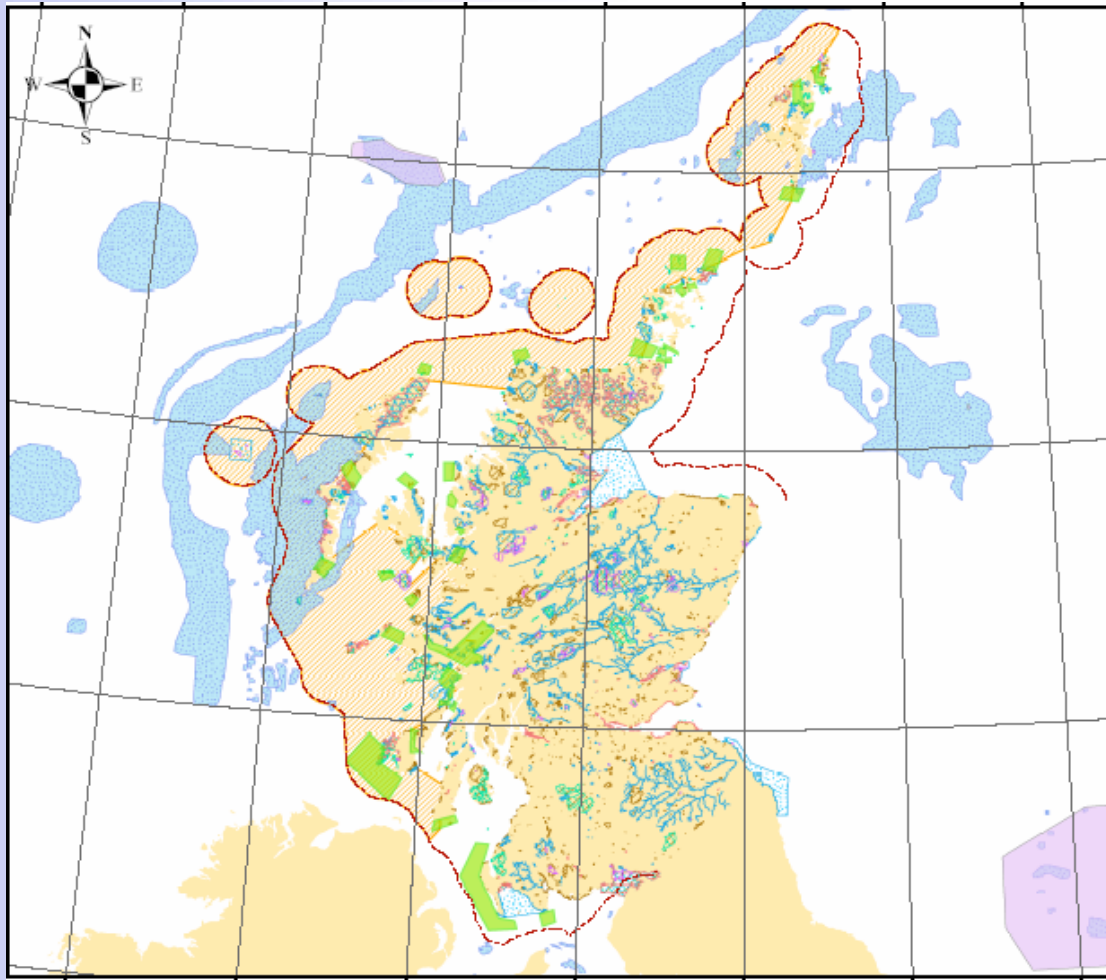
Fishing



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Protected Areas



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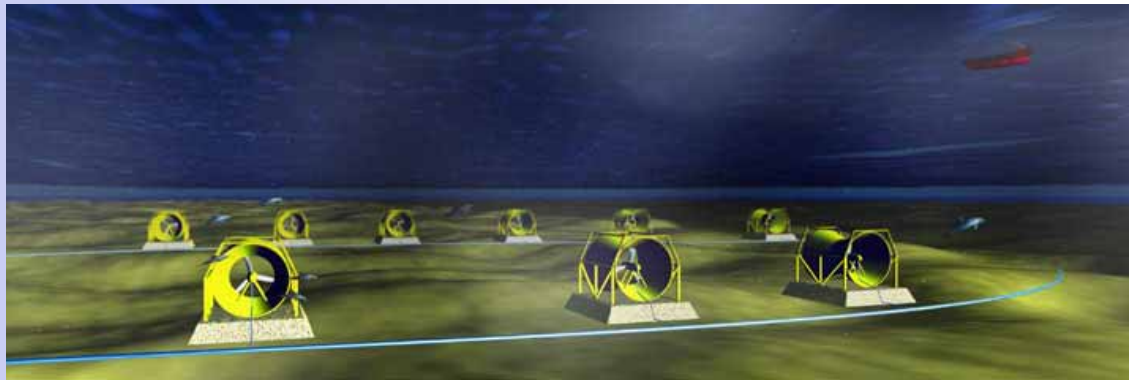
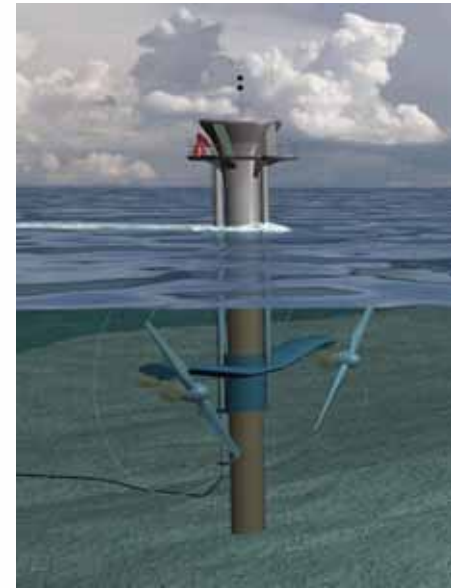
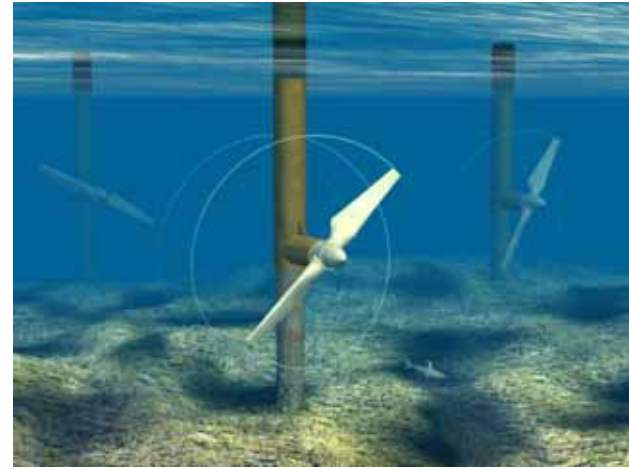
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Marine Mammals



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Where Are We Now?

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Where are we now?

- Project initiated in August 2005
- Scoping report published in February 2006
- Consultation exercise in February/March 2006
- Gaps in knowledge and information identified
- Specialist studies commissioned end of September 2006 to help fill knowledge gaps
- Assessment method agreed with steering group
- Assessment is underway



Consultation Structure - Scoping

Steering group

- EMEC
- Crown Estate
- FRS
- SEPA
- SNH
- MOD
- CoSLA
- Herriot Watt University
- Edinburgh University
- Scottish Renewables Forum
- MCA
- RSPB
- SFF
- JNCC
- Historic Scotland
- Consultation with the Steering Group is ongoing

Developers

- Wave and tidal developer workshop
- Follow up meetings with individual developers

Key organisations

- DTI oil and gas SEA team
- BWEA

A comprehensive list of consultees were contacted at Scoping and will be consulted at the final Environmental Report stages

Consultation with the Steering Group is ongoing



Gaps in knowledge and information

- **Baseline information and data**
 - Oil and Gas SEA areas overlap fully with study area so good level of consistent baseline information available for many topics
 - Two areas identified where more detailed baseline information is required
 - Ambient Noise
 - Munitions contamination
- **Gaps in knowledge and understanding with regards to the environmental effects of commercial device arrays**
 - Removal of energy from the marine environment
 - Risk of collision between birds, fish and mammals and devices
 - Noise emissions from operational arrays of devices



Addressing knowledge, understanding and information gaps

<p>Removal of energy from the marine environment</p>	<p>A study commissioned by the Crown Estate and Countryside Council for Wales has recently been published on this subject</p> <p>The SuperGen consortium have been carrying out research on this issue</p> <p>Professor Iain Bryden is a member of the SEA project team and has been working to consolidate the available information</p>
<p>Risk of collision between birds, fish and mammals and devices SAMS</p>	<p>Specialist study commissioned looking at:</p> <ul style="list-style-type: none"> - device characteristics - organism behavioural characteristics
<p>Noise emissions from operational arrays of devices QINETIQ</p>	<p>Specialist study commissioned looking at:</p> <ul style="list-style-type: none"> - Ambient noise in the study area - Mechanical characteristics of devices and associated noise emissions - Limited field survey EMEC / SAMS - Modelling of noise emissions for commercial device arrays
<p>Shipping and Navigation MARICO</p>	<p>Specialist study commissioned looking at:</p> <ul style="list-style-type: none"> - Effects on shipping and navigation – local, national and regional - Safety issues <p>Drawing on AIS data</p>
<p>Munitions contamination QINETIQ</p>	<p>Study area is extensively used for military exercises:</p> <p>Specialist study commissioned looking at:</p> <p>Extent and Types of munitions contamination</p> <p>Issues associated with disturbance of munitions</p>



Assessment Methodology

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Assessment Methodology

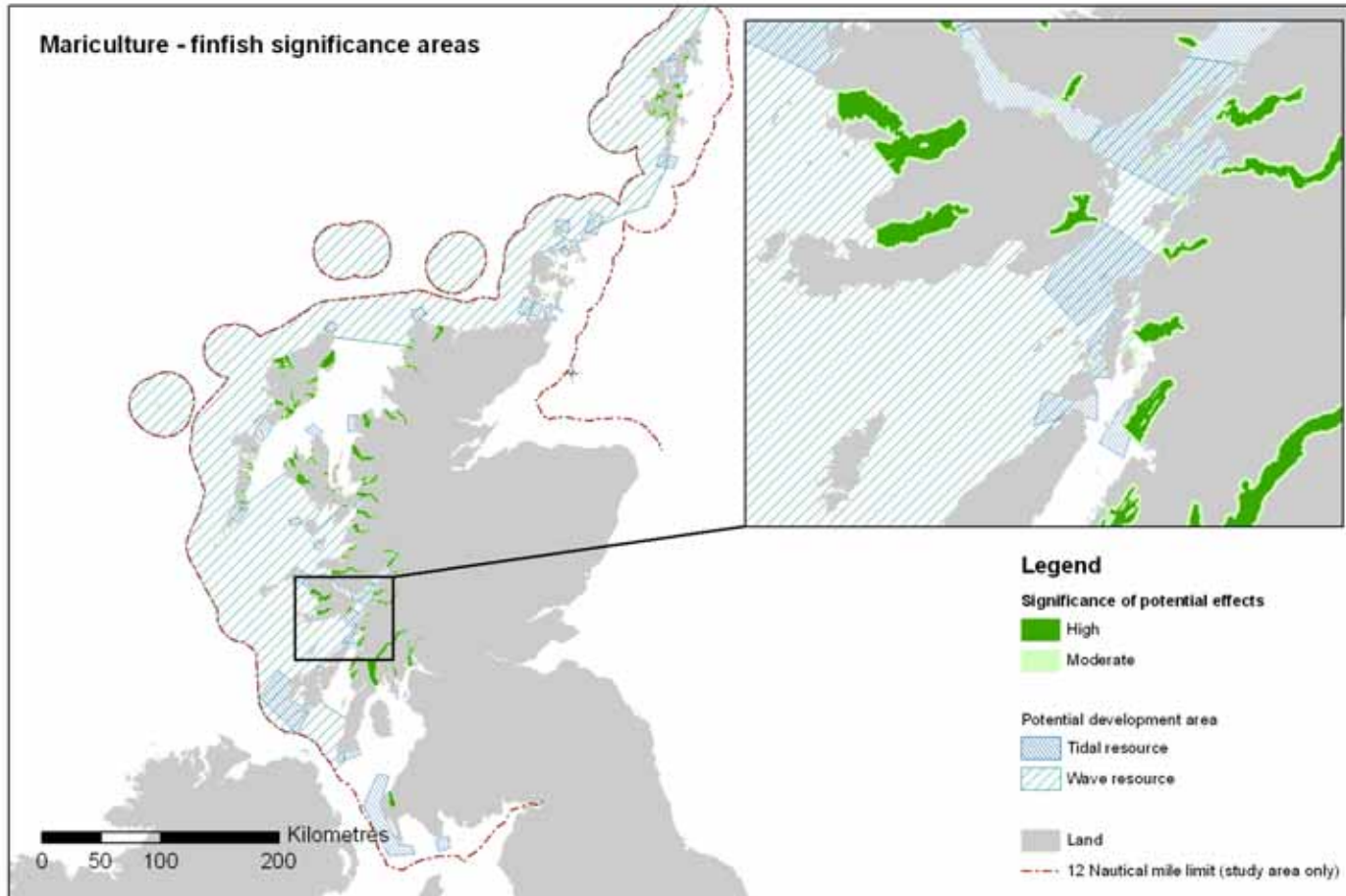
- The proposed assessment methodology was agreed with the Steering Group in May 2006
- Assessment will highlight areas where limited understanding means that only low confidence conclusions can be made
- Clear presentation of impact significance in maps and tables
- Impact significance to be determined both assuming no mitigation measures are employed, and assuming industry standard mitigation



Limitations and issues arising

- EIA v SEA
- Emerging technology and sector
- Information and knowledge gaps, baseline information and device effects
- Topic specific approach to assessment

Potential significance of effects – Finfish





Project Timescales





Project Timescales

- Project initiation August 2005
- Scoping Report was circulated February 2006
- Scoping consultation was undertaken February – March 2006
- Assessment methodology confirmed – May 2006
- Completion of additional studies Quarter 4 2006
- Publication of Strategic Environment Report proposed for consultation Quarter 1 2007 (will include recommendations for monitoring)
- SEA to be finalised in Quarter 2 2007

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