Industry - Research collaboration to identify how better use of existing research and available tools could reduce project risk to streamline consenting within the South West Marine Energy Park.

Matthew Ashley
Marine Energy Parks

‘Attract investment and accelerate the commercial development of the marine energy sector’
What is the issue?

1. Is research keeping up with development and is industry utilising most effective research?

2. Uncertainty: risk to the environment and the livelihoods it supports
   - Lack of knowledge / evidence
   - Potential environmental and socio economic impacts
   - Delay consent
   - Prevent investment
Win - Wins

Industry

• Aware of major consent issues
• Require effective research
• Potentially hold data

Concerned about same issues

Researchers

• Expertise, tools and methods
• Solutions may be known already
• Novel research aided by data and collaboration
The Priority Questions Approach

1. Nomination of priority research needs by industry
2. Communication of existing research and application of research methodologies from scientists
   - For Industry research applied to their needs
   - For Researchers provides confidence that appropriate methodologies and thorough science are being applied to developments (and decisions)
Priority topics selected from ORELG’s issue list, NERC MRE key areas, RWE Environmental Scoping Atlantic Array

<table>
<thead>
<tr>
<th>Section 1:</th>
<th>Priority level</th>
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<tbody>
<tr>
<td>Research topics</td>
<td>Low 1</td>
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<tr>
<td>1. Policy and planning</td>
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<td>2. Stakeholder engagement</td>
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<td>3. Effects of devices and arrays on marine habitats and species.</td>
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<td>4. Interaction with fishing and existing marine activities</td>
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<td>5. Social, cultural and economic impacts and opportunities</td>
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<td>6. Array scale and cumulative effects</td>
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<td>7. Please provide your own topic if it is not available:</td>
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• Questions nominated within priority topics

Section 2: For each of the highest priority topics you have identified please provide (on following page):

Priority research questions or knowledge needs that need to be addressed to reduce environmental, social and economic risk from marine renewable energy (MRE) development to aid streamlining of the consenting process.

• A total of 21 individuals completed the survey through face to face or telephone interviews. These included 10 representatives of consultancies, 6 developers, 3 researchers within government bodies and 2 regulators.

• 63 questions generated
Results: Priority Topics

81%
Effects on habitats and species

38%
Policy and planning

Effects on fisheries and other marine activities

Social, cultural and economic effects

Cumulative effects
Results: Priority Research Needs

• Identify which environmental scoping factors are important for a site and which can be removed. (39%)
• Quantify balance between environmental /economic impacts and environmental /economic benefits. (33%)
• How do marine mammals behave in relation to tidal turbines? (28%)
Questions within topics

Effects on habitats and species

Marine mammals

• Behavioural responses of marine mammals to pile driving noise, what are the effects on individuals and the effects on populations?
• How do seals behave in relation to tidal turbines, what is their response to devices and arrays and how are their movement patterns effected?
• Baseline data is required on existing distribution and movement patterns of seals and cetaceans

Fish

• Requirement for baseline information on distribution, habitat use and migratory patterns of fish species
• How do different fish species interact with devices and arrays?
• How do migratory fish respond to tidal turbines and arrays (specifically salmon)?
• What are the effects of electric and magnetic fields on fish species occurrence and movement?
Relevant research

• Effects on habitats and species
Remaining Research Needs?

• **Long term** effects of pile driving noise on marine mammal populations

• Response of marine mammals at array scale (behaviour and how are their movement patterns effected)

• Effects of devices and arrays on migratory fish

• Effects of electric and magnetic fields on species occurrence and movement (especially at multiple array scale).

• Evidence of species responses to tidal turbines which have been operating consecutively for 40 or more days
The Benefits
Thankyou

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