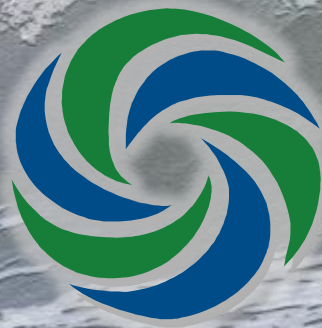


Consolidation of wave and tidal project consenting issues and research priorities

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Project drivers

- Need to focus research on the priority Environmental Impact Assessment (EIA) issues to help streamline the consenting process
- Recognition of the potential benefits of a coordinated research programme similar to e.g. ORJIP Offshore Wind
- Willingness to establish such a coordinated research programme for wave and tidal sectors
- Need for consensus on what the key consenting issues and research priorities are to focus such a programme

Project aims

- Produce a consolidated up-to-date list key of strategic consenting issues facing the wave and tidal energy sectors.
- Identify the priority research gaps relevant to wave and tidal stream demonstration scale arrays and then outline potential approaches to fill them.
- Identify strategic research priorities which any coordinated research programme could focus on.
- Develop outline plans for priority research projects.

Note: Link to project report in Delegate Notes.



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graph LR; A[Key issues] --> B[Research gaps]; B --> C[Priority projects];
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Key
issues

Research
gaps

Priority
projects

Task 1 – Identification of key consenting issues

Objective – to identify consenting (EIA/HRA) issues relevant to the wave and tidal sectors.

- Ecological
- Physical
- Human

Approach – Call for Evidence, review of existing information and input from project team. Sense checked at NERC workshop.

- **Output** – list of 32 key strategic consenting issues

Task 2 – Research gap analysis

Objective – to identify any research gaps in relation to each key issue.

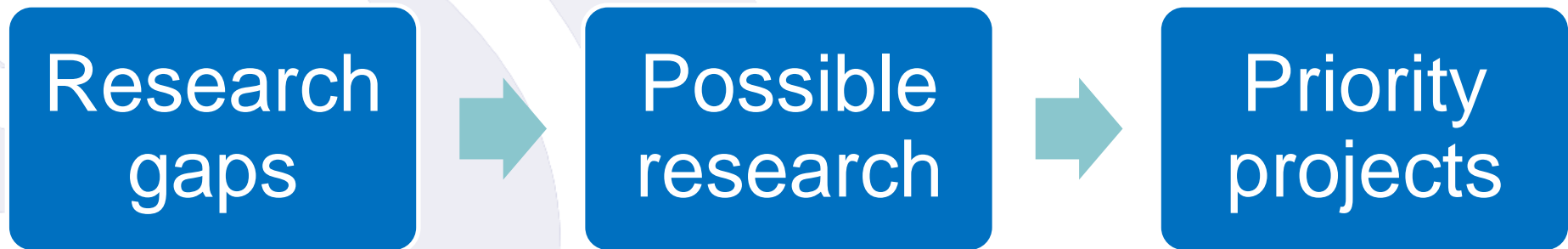
Approach – review of available information, input from the project team and responses to Call for Evidence.

Output – 15 research gaps identified.

Note: for many key issues, no gaps identified.

Task 3 – Research recommendations and identification of priority research projects

- **Objective 1** – identify research areas to address each gap
- **Objective 2** – identify who would be most suitable to undertake/coordinate each research project.



- Priority projects = those that would address **key initial questions** (not all questions)

Task 3 – Outputs

- List of priority projects to address research gaps that could be undertaken or coordinated by:
 - Regulators and SNCBs
 - Researchers
 - Developers
 - Local Authorities
 - **Coordinated research programme – 5 projects**

Note: Specific focus of this project was to identify and outline projects for a ‘coordinated research programme’ to focus on.

Priority projects for a coordinated research programme

- Overarching objectives:
 - Help address existing demonstration scale consenting issues
 - Inform environmental mitigation and monitoring around first arrays
 - Inform any necessary adaptive management strategies for first arrays
 - Help address future commercial scale consenting issues
- Outline plans for each project developed

Project 1 – Monitoring around operating single devices and first arrays to gather further information on wildlife behaviour

- Gather data to inform collision risk assessments (tide)
- Monitor behavioural effects (avoidance, attraction, displacement)

Project 2 - Further investigation into the possible physical consequences of collision for marine wildlife with operating tidal turbines

- Determine whether key species are likely to be struck by turbine blades
- Determine the possible physical consequences

Project 3 – Further development of suitable monitoring instrumentation and methodologies

- Support development of technologies and agreed approaches for monitoring wildlife behaviour and collision risk around wave and tidal devices in high energy environments.

Project 4 - Development of an agreed approach to assessing the potential effects of displacement from wave and tidal arrays

- Building on existing information, determine whether or not displacement is an issue for the wave and tidal sectors; and
- To establish an agreed approach to assessing the potential effects of displacement in project EIA/HRA.



Project 5 - Establishment of an acoustic 'evidence base' for operational wave and tidal devices and first arrays

- To build and maintain an evidence base of acoustic monitoring data and any modelling results to inform collision risk assessments and noise propagation modelling.

Conclusions and next steps

- Project Report provides:
 - Consensus as to the key issues and research priorities
 - A baseline for future research
 - Outline plans for each priority research project
- Regulators, SNCBs, developers and researchers can now review the conclusions and consider how they can address priority issues identified
- Outline project plans can be developed and implemented to address the key issues and gaps identified

Take home points

- Essential to recognise and build upon what we already know
- A large number of key issues have *been* addressed and a large number are currently being addressed
- Collaboration between regulators, industry and researchers will be key to addressing a number of the remaining issues
- International collaboration can play a key role
- Research should be undertaken in parallel with development



Thank you

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<http://www.thecrownestate.co.uk/media/485012/consolidation-of-eia-hra-issues-and-research-priorities.pdf>

Link provided in Delegate Notes