Notes on Completion: Please refer to the appropriate NIA Governance Document to assist in the completion of this form. The full completed submission should not exceed 6 pages in total.
Network Licensees must publish the required Project Progress information on the Smarter Networks Portal by 31st July 2014 and each year thereafter. The Network Licensee(s) must publish Project Progress information for each NIA Project that has developed new learning in the preceding relevant year.

NIA Project Annual Progress Report Document

Date of Submission

Jul 2025

Project Reference Number

NIA2_NESO090

Project Progress

Project Title

Strategic Case for Tidal Range

Project Reference Number

NIA2_NESO090

Project Start Date

September 2024

Project Duration

0 years and 9 months

Nominated Project Contact(s)

innovation@nationalenergyso.com

Scope

Over a period of 4 months the main emphasis of the project is to establish a strong case for the development of tidal range energy in the GB. It will involve carrying out high-level assessments for Commercial, Financial and Management cases, with the objective of offering a potential solution related to tidal range energy. Potential benefits of this project will be determined by the insights gathered, however could include:

- Establishing a more holistic approach for tidal range energy potential in decarbonising the grid by 2035 or sooner.
- Allowing the NESO to assess potential grid constraints from assumed tidal projects.
- Allow the NESO to establish the potential for further tidal range schemes, allowing more informed dialogue with potential developers or government-led proposals.
- Accelerating zero-carbon transition

Objectives

- Offer a potential solution related to the deployment of tidal range energy facilities in GB which covers a holistic view of strategic, socio-economic and operability cases.
- Investigate the high-level feasibility of operating tidal range energy facilities on the GB energy and their potential contribution to grid constraints and other system services.
- Investigation into how tidal range facilities can be spatially planned to achieve “optimal” commercial and system operability benefits, also contributing to accelerating the achievement of a zero-carbon electricity system, at a competitive whole energy system cost.
- Remain technology neutral in the post assessment phase to ensure that viability of other technologies and optimal use of seabed deployment are considered against the outputs of the project.

Success Criteria

The success of this project will be determined if the following questions can be answered:

- What is the role of tidal range energy facilities and what will be the contribution be to decarbonising the GB electricity system?
- What are the likely impacts on the wider energy system, including any effect on electricity system balancing costs, wholesale prices, transmission costs, impact on CO2, system inertia and security of supply from the assumed tidal projects assessed in the innovation project?
- How can the right investment signals be provided to tidal range facility developers and government policy makers given strategic, locational, and operational considerations?

The answers to the questions will allow NESO to be able to better understand the fundamentals of tidal range energy facilities and their role in the GB electricity system.

Performance Compared to the Original Project Aims, Objectives and Success Criteria

National Energy System Operator ("NESO") has endeavoured to prepare the published report ("Report") in respect of Strategic Case for Tidal Range project NIA2_NESO090 ("Project") in a manner which is, as far as possible, objective, using information collected and compiled by NESO and its Project partners ("Publishers"). Any intellectual property rights developed in the course of the Project and used in the Report shall be owned by the Publishers (as agreed between NESO and the Project partners).

The Report provided is for information only and viewers of the Report should not place any reliance on any of the contents of this Report including (without limitation) any data, recommendations or conclusions and should take all appropriate steps to verify this information before acting upon it and rely on their own information. None of the Publishers nor its affiliated companies make any representations nor give any warranties or undertakings in relation to the content of the Report in relation to the quality, accuracy, completeness or fitness for purpose of such content. To the fullest extent permitted by law, the Publishers shall not be liable howsoever arising (including negligence) in respect of or in relation to any reliance on information contained in the Report

When complete, the project is expected to deliver fully on the intended benefits, including to establish a greater understanding and holistic view of the potential role of Tidal Range in the future GB energy system, and giving NESO a great understanding of Tidal Range to inform future work and dialogue.

The full project output report including the methodology used and findings is due to be released in later summer 2025.

Required Modifications to the Planned Approach During the Course of the Project

No major modifications to the goals and overall approach for this project have been implemented during project delivery. However, there have been changes made to the project based on expert review and feedback throughout the project, and this will ensure our findings are robust and useful.

For example, during review, an agreed assumption relating to the replacement capacity mix in our counterfactual scenario was identified as having greater impact on wholesale market price outcomes than previously understood. As such, being keen to explore this, we are carrying out some additional modelling to ensure our study is robust and fully addresses the sensitivity of energy prices to this assumption.

As this requires additional modelling work, this has led to the extension of project timelines and has subsequently delayed publication. It is likely the outcomes of this will also require consideration in the final report narrative.

Lessons Learnt for Future Projects

The wide range of internal expertise we have been able to draw on (from both the delivery partner and NESO) during review of this project has been extremely helpful in ensuring a robust set of results. Drawing on the full range of expertise available internally at earlier stages may have mitigated the need for later changes to modelling approaches, and this will be a major lesson to take away from this project.

The project is also limited in scope and it is likely that further work to build on the initial cases tested will be recommended.

Note: The following sections are only required for those projects which have been completed since 1st April 2013, or since the

previous Project Progress information was reported.

The Outcomes of the Project

The project has already served to move on NESO's understanding of Tidal Range in terms of its potential impact on the energy system, and has facilitated a more informed dialogue between NESO and external stakeholders on the topic. As the project moves towards completion, the expectation is that this will facilitate further conversation and dialogue, advancing knowledge in this space both within NESO and externally.

Data Access

Details on how network or consumption data arising in the course of NIA funded projects can be requested by interested parties, and the terms on which such data will be made available by NESO can be found in our publicly available "Data sharing policy related to NIA projects (and formerly NIC)" and Innovation | National Energy System Operator.

National Energy System Operator already publishes much of the data arising from our NIA projects at www.smarternetworks.org. You may wish to check this website before making an application under this policy, in case the data which you are seeking has already been published.

Foreground IPR

The final report, including background, modelling results and CBA is expected to be released on to the Smarter Networks Portal.