

Contribution to the European Commission's Issues Paper on Ocean Energy

This contribution reflects comments on the paper from the **Scottish Government** and **Scottish Enterprise**.

General comments

- **Overall, the level of ambition is acceptable, although targets and priorities should take account of the different stages the technologies are at.**

The paper recognises that the technologies to capture the various ocean energy resources – tidal stream, wave, tidal range, salinity gradient, and ocean thermal gradient (OTEC) – are at different stages of development. However, the targets and priorities in the issues paper seem to apply to the technologies as a group.

Scotland's policy approach is to treat the various technologies separately, recognise their different stages of maturity, and put in place tailored policies to develop these technologies. This is based on the lessons/experience gained from developing all three technologies over a period time.

Targets

- Scotland's experience would agree with targets for ocean energy based on LCOE, on the basis that these targets reflect the necessary figures the sector could consider in order to become cost competitive.

Caution is advised however in terms of these targets' being used as criteria in the evaluation of funding applications, especially under programmes such as Horizon 2020, or the proposed Innovation Fund, as this may lead to failing to support the kind of innovation needed in the short term, in order to achieve these targets in the longer term.

- The paper notes separate LCOE targets for wave and tidal energy. The LCOE target for tidal does not specify whether it is for tidal *stream* or tidal *range* or for both.
- The paper notes a common target on the availability (reliability) of 'ocean energy converters'. There could be issues in the efficacy of grouping of **technologies of different maturity together**.
- The lack of baseline performance data and the complexity of the innovation challenge across different aspects of technology, components and systems make the identification of further indicators a complex process.

Level of ambition

- The paper notes that "[r]esearch, development and innovation efforts should also focus on technologies and processes necessary to develop and **optimise farms**, such as subsea power hubs, lay-out optimisation, and characterisation of the environment."

While the focus on farms and array optimisation is helpful for tidal stream, Scotland's focus is on improvements to subsystems and components which might then foster standardisation, and encourage better overall device design. Scotland is taking a stage-gate approach to technology development; ensuring that arrays constructed will include fit-for-purpose devices, components and subsystems.

Implementation

- In particular, the scope of **Annex 1** seems to extend beyond the reach of Horizon 2020 funding, and fails to address implementation mechanisms.
- The introduction to **Annex 1** says that “[w]hile wave and tidal are at different stages of development, it is the opinion of the stakeholders that a common program for both should be maintained, as most issues are similar for both.”

In Scotland's experience, this is not the most effective approach. Although there are some similarities in ocean energy technologies, **developing a 'one size fits all' programmes does not work. To overcome this, Scotland introduced tailored programmes, such as Wave Energy Scotland.**

- Allocated funding seems to **favour array deployment over technology development.** Scottish experience **would encourage a more balanced approach to funding.**