

**MINUTES OF SCOTTISH MARINE ENERGY INDUSTRY WORKING GROUP
MEETING
14 MARCH 2018**

Attendees

Paul Wheelhouse	Minister for Business, Innovation and Energy (chair)
Andrew Ferguson	Assistant Private Secretary
Cameron Smith	Atlantis Resources Ltd
Patrik Møller	CorPower (by Skype)
Sian Wilson	Crown Estate Scotland
John Thouless	DP Energy
Neil Kermodie	European Marine Energy Centre
Elaine Hanton	Highlands and Islands Enterprise
Helena Gray	Marine Scotland
Tony Laing	National Subsea Research Initiative
Gavin McPherson	Nova Innovation
Rémi Gruet	Ocean Energy Europe
Robert East	OpenHydro
Gavin Smart	ORE Catapult (guest speaker)
Jeremy Smith	QED Naval
Andrew Scott	Scotrenewables
Simon Wallace	Scottish Development International
Mark Georgeson	Scottish Enterprise
Anna Kynaston	Scottish Government
Janine Kellett	Scottish Government
Gordon Patterson	Scottish Government
Claire Mack	Scottish Renewables
Henry Jeffrey	University of Edinburgh
David Crooks	University of Edinburgh (guest speaker)
Tim Hurst	Wave Energy Scotland (HIE)

1. Welcome, introductions and apologies

1.1 Mr Wheelhouse welcomed attendees and invited people to introduce themselves. Apologies were noted from Seonaid Vass of Scottish Enterprise (represented by Mark Georgeson); Simon Forrest of Nova Innovation (represented by Gavin McPherson); Simon Wallace of SDI (represented by Paul O'Brien); Simon De Pietro of DP Energy (represented by John Thouless); Brendan Corr of OpenHydro (represented by Robert East); Neil Gordon of SubseaUK (represented by Tony Laing); Cameron Johnstone of Nautricity and Barnaby Wharton of RenewableUK.

1.2 Simon Grey of AWS Ocean Energy; Hans van Breugel of Tocardo and Heikki Paakkinen of Wello Oy were not present.

1.3 The minister began by reminding members of the aims of the working group: to focus on Scottish priorities and concentrate on actions that can be delivered at a Scotland level, as well as working with the trade associations on the group to

highlight the wider UK opportunity. The minister also emphasised the importance of the sector presenting a clear and consistent message about its achievements, the potential prize, the barriers, and the support required.

2. Minutes of last meeting

2.1 The minutes of the meeting on 29 November 2017 were approved.

2.2 A proposal from the minister to publish the minutes of the meetings of the group on the Scottish Government website was also approved.

3. Presentations from ORE Catapult (marine energy cost reduction and industrial benefit project) and University of Edinburgh (economic benefits from wave and tidal energy study)

3.1 Gavin Smart from the Offshore Renewable Energy Catapult presented the high level findings from its recent assessment of how wave and tidal energy can deliver against the three tests in the UK government's Clean Growth Strategy. Members of the group were thanked for their input to the study.

3.2 The report shows that significant cost reductions can be achieved in tidal stream in the near term through economies of scale and accelerated learning, and that ongoing reductions will be achieved over a relatively modest volume of global deployment. It forecasts LCOE for tidal of £150/MWh by 100MW installed, £130/MWh by 200MW and £90/MWh by 1GW. Gavin said there was real consensus around the cost reduction trajectory – although there were different views on how to do it. He noted that they had not looked at ground breaking innovation but at existing technologies and so it could be argued that these estimates are conservative.

3.3 The report finds that by 2030 tidal stream could create a net economic benefit of £1.5bn and support 3,700 jobs at a cost via revenue support of £600m, while wave energy could create by 2040 a net economic benefit of almost £2bn and 8,690 jobs at a cost via revenue support of £350m. The report estimates that marine energy technologies have the potential to reduce CO₂ emissions by at least 3MtCO₂ per year after 2030 and at least 13MtCO₂ per year by 2040, and to provide additional energy system and energy security benefits.

3.4 While the UK has some of the best marine energy resources in the world, a world leading supply chain and highly relevant existing skills, the UK is not unique and other countries are poised to take the global lead. There is therefore a role for more international collaboration. In addition to the need for revenue support mechanisms and R&D funding, the report recommends that the industry works in a joined-up way to maximise the size of the collective prize.

3.5 Gavin advised that the Catapult will be engaging further with BEIS and other UK government officials in the near future. The group will be informed of developments as well as opportunities to provide further input.

3.6 David Crooks from the University of Edinburgh's Institute for Energy Systems presented recent work to evaluate the potential value of the wave and tidal industry. This work is separate from but complementary to the ORE Catapult study, and shows that wave and tidal stream can reach parity with offshore wind by 2030. David said that for domestic marine energy projects the UK content could potentially be 80%, and for international projects the UK content could potentially be 15%. The work highlights a 2:1 GVA to subsidy ratio for tidal stream and a 4:1 GVA to subsidy ratio for wave by 2040. However, with carefully targeted public investment, this could potentially increase to a 4:1 GVA to subsidy ratio for tidal stream and a 6:1 GVA to subsidy ratio for wave.

3.7 There was a short discussion and Q&A session on both presentations. Gavin McPherson said there is potential for the UK content in international projects to be higher than projected currently if the right investment is made in the near future, citing the example of the Danish wind industry.

3.8 David Crook clarified that the University of Edinburgh work assumes that the sector receives the carefully targeted support it requires, and that the focus of this work is to present the scale of the potential prize for the UK.

3.9 Patrik Moller suggested that the assessment in the Catapult report that wave energy deployment will be 10 years behind tidal stream is overly pessimistic.

3.10 Tony Laing reflected that the two main drivers of cost reduction in the subsea sector were reliability and standardisation. The group agreed that there were parallels for marine energy with other industries, including the approach to cost reduction adopted by the offshore wind industry. The minister was also interested in the assumptions around the cost of capital and the strength of the supply chain.

3.11 Given time constraints, it was agreed that further questions or comments on the two studies should be made directly to the authors or via Janine Kellett or Gordon Patterson in the Scottish Government.

4. Update on Science and Innovation Audit: Maximising the Marine Economy of the Highlands and Islands

4.1 Elaine Hanton from HIE provided an overview of a new, UK government-supported study which will explore the potential of the Highlands and Islands' marine resource as a driver of economic growth. The focus of the audit will be on aquaculture, wave and tidal energy and marine biotechnology as the region's most significant marine-related opportunities.

4.2 The audit will also consider the extent to which the existing planning, policy and regulatory framework is supportive; interrogate the conditions necessary for successful marine technology industry clustering; and consider the accessibility to the right levels of scientific and workplace skills to support growth ambitions.

4.3 HIE is the lead partner in the consortium which also includes EMEC, WES, and Marine Scotland among others. The final audit is due to be submitted to BEIS by the end of June 2018. Elaine emphasised the importance of industry

engagement in this process and encouraged members to contact her with questions or to provide input.

5. Review of 2012 Marine Energy Action Plan

5.1 The minister reminded the group that we discussed the Marine Energy Action Plan of 2012 at the last meeting. The industry identified finance, grid, infrastructure and supply chain, planning, and Europe as its priorities in 2012. We agreed that this group would take stock of what has been achieved since then; consider if these five priorities remain the same; and decide if the priorities are different for wave than for tidal.

5.2 As there was not time at the last meeting to cover all of the previously identified priorities, the minister outlined some of the key achievements for the sector under the Europe heading at this meeting, including:

- Securing the inclusion of ocean energy in the EU Strategic Energy Technology (SET) Plan, and ensuring the sector has benefitted from various EU funding streams.
- Scottish participation in the European Commission's Ocean Energy Forum, resulting in the production and delivery of a strategic roadmap.
- The Wave Energy Scotland pre-procurement model is being adopted by the European Commission as it prepares to launch a Europe wide scheme to support wave energy technology development.

5.3 The minister encouraged the group to look at two recent Scottish Government papers on the implications of Brexit and how the Scottish Government sees Scotland's place in Europe:

- [Scotland's Place in Europe: People, Jobs and Investment](#) (January 2018)
- [Scotland's Population Needs and Migration Policy](#) (February 2018)

5.4 Janine Kellett thanked the group for responding to the Scottish Government's recent survey on marine energy industry priorities. She noted that as this was a small sample it would not yield definitive conclusions, but it did provide a snapshot of views and could provide the basis for further discussion.

5.5 There was almost unanimous agreement that finance was the top priority. Comments suggested that respondents were most concerned about the route to market/availability of revenue support and the cost of capital. Planning and consenting was one of the lowest priorities. There was no difference in the ranking of priorities between the wave and tidal sectors (though the number of respondents from the wave sector was very small). There was broad agreement from attendees that finance should be the main focus of the group's work in the future.

5.6 It was noted by several members that grid should not be allowed to fall below the radar, and that priorities are likely to evolve over time. The minister proposed that representatives from Ofgem, National Grid and the network owners could be invited to present on grid at a future meeting.

5.7 Members said they would welcome an update and discussion at future meetings of the group on the proposed publicly owned energy company and the Scottish National Investment Bank and how they might interact.

5.8 Neil Kermode commented that while it was good to see such unanimity, we must recognise the urgency: there is a risk the industry could stall in Scotland unless the right action is taken in the very near future. The minister highlighted that he had highlighted this on numerous occasions with UK government ministers.

5.9 Rémi Gruet noted that, in terms of funding from Europe, the European Commission would see revenue support mechanisms as the responsibility of member states. EU funding is more likely to be aimed at research and demonstration.

5.10 There was agreement that there is a very positive narrative emerging around marine energy's alignment with many of the themes and priorities in the new Scottish Energy Strategy, including innovation, energy storage, and local energy systems.

6. Closing remarks and date of next meeting

6.1 There was no further business and the meeting ended.

Summary of actions

- **Questions and comments on the ORE Catapult project to be passed to Gavin Smart or the Scottish Government secretariat.**
- **Questions and comments on University of Edinburgh study to be passed David Crooks or Henry Jeffrey, or the Scottish Government secretariat.**
- **Questions or comments on Science and Innovation Audit to be passed to Elaine Hanton at HIE, or the Scottish Government secretariat.**
- **Scottish Government to invite guest speakers (potentially SSE/ScottishPower/National Grid/Ofgem) to attend a future meeting for discussion on grid issues.**
- **All members are encouraged to suggest agenda topics and guest attendees for future meetings.**
- **Scottish Government to arrange, at the appropriate time, for updates on both the POEC and SNIB at future meetings.**
- **Scottish Government to confirm exact details of next meeting, which is due to take place in June 2018.**