Department of Energy & Climate Change

Scottish Islands Renewables – Update Report

19 December 2013

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This document is available from our website at https://www.gov.uk/government/consultations/additional-support-for-scottish-island-renewables.

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The Purpose of this document

1.1. This document is intended to serve two purposes:

- To provide a summary of the responses to the UK Government's consultation on additional support for Scottish islands renewables projects; and
- To update stakeholders and interested parties on how the UK and Scottish Governments, working with the island communities are taking forward the broader issues raised in the independent study (see 3 below).

1.2. Section 4 summarises the responses received to the consultation paper and sets out the conclusions we have drawn as a result. More information on answers to the specific questions raised and other points raised are listed at Annex A. A list of respondents can be found at Annex B.

1.3. Section 5 sets out what we are doing in relation to grid access, early stage funding for marine technologies and the supply chain. This indicates our ongoing commitment to bringing on deployment of marine technologies and onshore wind projects on Scottish islands.

Introduction

2. The UK and Scottish Governments recognise that the potential for renewable energy in the Scottish islands is considerable. In October 2012, The Rt. Hon. Edward Davey and the Scottish Government set up a joint independent study to address concerns that renewable projects on the Scottish islands (onshore wind and marine projects) are not coming forward quickly enough. The study looked at the following:

    - The commercial viability of renewable projects (onshore wind and marine) on the Scottish islands within existing support frameworks;
    - the economic value of renewables projects on the Scottish islands and their potential to make a cost-effective contribution to renewables targets and other longer term decarbonisation objectives;
    - the barriers to development of renewable projects and why more projects are not coming forward; and
    - broadly costed options for actions to tackle barriers to development, with an assessment of their value for money compared to alternative sources of renewable and low carbon power.

2.1. An intergovernmental steering group was established to guide and assist the work. The group was chaired by DECC with representation from:

- Scottish Government
- Highlands and Islands Enterprise
- The three islands councils: Orkney, Shetland and Eilean Siar
- National Grid (as GB electricity system operator)
- Scottish Hydro Electric Transmission Ltd (SHE-T) as the local transmission operator
- Ofgem attend meetings in an observer role

Independent Study

3. Following a competitive tender, a consortium of Baringa Partners and TNEI was appointed to undertake an independent study, co-funded by DECC and Scottish Government. The analysis involved direct contact with actual and prospective renewable energy developers and other key stakeholders, including evidence sessions on each of the island groups.

3.1. The report was published by DECC and Scottish Government in May[1]. The key conclusions of the report were:

- Renewable generation in the Scottish islands could make a significant contribution to the UK's and Scotland's 2020 renewables targets as well as playing an important role in longer decarbonisation objectives.
- The development of renewables generation on the islands could have significant benefits to the economy through direct, indirect and induced jobs associated with marine and onshore wind technologies. These jobs may be newly created or displaced from other geographies or industries. The Scottish islands have some of the highest fuel poverty rates in the UK. Renewable generation and associated transmission links could provide further benefits related to local security of supply whilst the diversity benefits of developing renewables on the islands, especially marine, could reduce the overall cost of intermittency on the GB system.
- The report identified four key challenges faced by large scale renewables on the Scottish islands
    - Funding gap
    - Grid access
    - Early stage funding for marine projects
    - Supply chain
- The cost of renewables in the Scottish islands is significantly higher than comparable projects on the mainland, even when taking into account higher load factors on the Scottish islands. This is mainly because of the expensive subsea transmission links that would be required to connect to the GB grid, but also due to significantly higher operation costs.
- For onshore wind, projects on Orkney and Shetland are around 25% more expensive than their mainland equivalents with a levelised cost of energy £103-105/MWh. This is in the same range as other low carbon generation including nuclear and biomass. Project costs on the Western Isles are over 50% greater than

[1] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/199038/Scottish_Islands_Renewable_Project_Baringa_TNEI_FINAL_Report_Publication_version_14May2013__2_.pdf

their mainland equivalents with a levelised cost of £129/MWh. The extent of this cost differential is such that major developments would be unlikely to be economic at current support levels.

- Marine renewables are in an earlier stage of their evolution, and analysis confirms that these technologies will continue to require financial support (and other forms of funding) at levels at or above those currently being offered (5 ROCs/MWh).
- Reliance of Scottish island projects on proposed new transmission links is a further challenge, particularly for small or community owned projects or those with new technologies who are unable to underwrite the liabilities and associated security requirements and are therefore dependent on ‘anchor projects’.

Government Response on Funding Gap

4. The UK Government, with support from the Scottish Government and the intergovernmental steering group, has considered the report. The Government recognises the potential of the Scottish islands and is committed to unlocking the potential where it makes sense to do so.

Additional support consultation

4.1. In a report on how EMR would deliver UK investment published in June 2013[2], the UK Government announced the intention to take forward work to consider how to provide additional support. It identified a strong emerging option of providing a separate strike price for renewables located on islands where these have clearly distinct characteristics to typical mainland projects.

4.2. A consultation was published on 18 September 2013[3]. The consultation sought views on proposals to provide additional support for onshore wind located on islands comprising the local government areas of Comhairle nan Eilean Siar, Orkney Islands Council and Shetland Islands Council in the form of a higher strike price. The document proposed a strike price of £115 per MWh which would apply from 2017/18 onwards and was considered sufficient to bring on the more cost-effective of the projects on the Scottish islands. Projects eligible for this price would be treated in the same way as other projects in other respects.

4.3. The consultation closed on 30 October 2013. The responses to the consultation broadly agreed that renewables projects on Scottish Islands had unique characteristics which merited different treatment. The majority of respondents agreed that there was no evidence that other parts of the UK faced the same issues. There was also considerable support for the evidence base presented in the Baringa/TNEI report and the consultation document. Respondents also agreed that EMR was the preferred vehicle for providing any additional support.

4.4. Several of the responses to the consultation argued that a higher level of support would be needed to bring on deployment of onshore wind in the Western Isles. The price most frequently proposed was £130/MWh, although some responses considered that the proposed strike price of £115/MWh would be sufficient for the most cost effective projects across all island groups.

4.5. Several respondents argued that an equivalent uplift for marine projects as that proposed for onshore wind should also be agreed, as those projects face similarly higher costs than comparators elsewhere in the UK. There was little new evidence submitted to support changes to our proposals.

4.6. We received some comments that our stated expectation that 400 MW of deployment would be the result of the proposed strike price gave the impression of being a cap. We

[2] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209276/EMR_Spending_Review_Announcement_-_FINAL_PDF.pdf

[3] https://www.gov.uk/government/consultations/additional-support-for-scottish-island-renewables

are keen to make clear that there is no cap. We would be happy for more new renewables projects to come to fruition but the evidence suggested and modelling that would not be the case. It should also be noted, however that projects in the Scottish Islands will be subject to the same potential constraints on allocation as other projects.

Conclusion

4.7. We previously concluded that there is considerable potential in the Scottish islands to develop large projects that are cost effective compared to marginal technologies and that this potential can be delivered in a way which can deliver value for money for consumers.

4.8. This potential for renewable projects arises from a particular set of circumstances that exist in relation to projects on the Scottish islands, and in particular in relation to the renewable energy resources on and around the Scottish islands. We argued that these characteristics mean that the development of onshore wind on the Scottish islands constitutes a separate class of renewable generation that warrants separate treatment and potentially a different level of support from other onshore projects.

4.9. There is considerable support for this option. The limited opposition comes from elsewhere in the UK, arguing that the additional support for renewables on the Scottish islands is unjustified. Insufficient evidence has been provided to support the claim that other areas of the UK have comparable characteristics and warrant similar treatment as a result.

4.10. Our analysis of the responses to the consultation did not support altering our approach. For onshore wind, we accept that £115/MWh may not bring on all projects. However, there was some support for this level of support from developers with projects on each island group. The extent to which further support would be required to bring on additional deployment on the Western Isles would not be a cost-effective solution.

4.11. We consider that a higher strike price available only to one of the island groups at a level at or close to that available to offshore wind would not deliver value for money. Increasing the strike price for these projects would place additional pressure on the LCF, without the potential longer term benefits. Marginal renewable electricity technologies such as offshore wind are supported at particular levels in order to create the critical mass for learning that will allow costs to reduce. We do not consider that the learning advantages of onshore wind on remote islands are sufficient to justify support at the levels supporting marginal technologies.

4.12. The proposal is expected to lead to 400MW deployment of onshore wind on the islands by 2020 and annual generation of 1.5TWh and is consistent with the LCF constraint.

4.13. For marine, evidence from the responses shows that the majority of wave and tidal projects in the UK projects are located on the islands. We do not expect to see commercial-scale marine energy projects deployed during the lifetime of the first EMR delivery plan. As a result an island-specific uplift on the £305/MWh generic strike price is unlikely to lead to an increase in deployment during the first delivery period over that expected. It is difficult to conclude, therefore, that additional support is warranted at this time.

4.14. Given progress of the marine energy sector towards early commercial deployment, we anticipate that projects will be developed during the second Delivery Plan period. We therefore intend to consider again in detail whether Scottish Island-specific measures

for marine energy should be put in place, and at what level, as part of the second Delivery Plan period.

4.15. Several respondents explained that long lead times for Scottish islands projects meant future uncertainty over pricing was unhelpful for securing investment. The wider EMR consultations have received similar feedback. As a result, we will consider whether we can provide earlier assurance on future pricing to enable investment decisions. A more detailed summary of responses is at Annex A.

Other Issues Raised in the Baringa Report

Grid Access

5. In the consultation on additional support for island renewables, UK Government proposed to work with the Scottish Government to assess further the issues raised on the Baringa/TNEI report regarding grid access for developers on the islands. We have discussed the issue with the steering group and have listened to the views of stakeholders.

5.1. As a result, we decided to commission a further study to build on the work undertaken by Baringa/TNEI. This will focus on potential options to address grid access barriers under three broad categories:

- Options for aggregating developer demand
- Potential routes for third party underwriting of cable securities and liabilities
- Potential changes to the regulatory framework

5.2. An invitation to tender was issued in November and bids received and evaluated in early December. The project will shortly commence and is due to be completed in the spring.

Early Stage Funding for Marine

5.3. The UK has one of the best wave and tidal resource in the world and the UK Government and the Devolved Administrations are fully committed to the successful development of the marine sector.

5.4. The UK Government is fully committed to the development and deployment of marine energy technologies. To date the Government has provided sustained and targeted support for the development of the wave and tidal stream sectors enabling them to move from initial concept onto prototypes and looking to support the first arrays. The support package is comprehensive and larger than anywhere else in the world. It includes:

- Working through the UK Marine Energy Programme to remove barriers to develop and deploy marine energy at commercial scale.
- Providing innovation funding at all stages of the innovation chain
- Providing significant levels of revenue support for marine technologies under the Renewables Obligations and the Electricity Market Reform.

5.5. This Spending Review period will see over £80 million of public funds available for investment in marine energy innovation, including through the Marine Energy Array Demonstrator, the Scottish Marine Renewable Commercialisation Fund (MRCF) and other innovation programmes.

5.6. In addition, the UK Government prioritised marine energy under the first call of the European Commission New Entrants Reserve 300 (NER300) competition. As a result, two Scottish tidal stream projects have been awarded a total of €40m.The Scottish Government remains committed to supporting the marine renewables industry in Scotland. The £18m MRCF has been refocused to support Scotland's wave sector make the progression towards commercialisation. Further financial support is available to the marine renewables industry through the Renewable Energy Investment Fund (REIF). Marine developers are able to apply for loans, equity funding and guarantees. REIF investment in marine renewables will focus, primarily on the deployment and operation of commercial scale arrays. However, there is also scope to invest in marine energy array innovative enabling technology.

Supply Chain

5.7. The UK Government recognises the wider benefits from the development of the UK marine energy sector. As part of the work undertaken by the Marine Energy Programme Board (MEPB), work is underway to identify opportunities to develop a strong UK supply chain and make the most of the economic benefits a strong marine energy industry could bring.

5.8. Scotland's enterprise agencies have prioritised the development of the marine sector within their Renewables portfolios. As well as enabling the successful commercial deployment of marine energy technology, they have a key role in ensuring that as much economic value as possible is created in Scotland from the growth of the industry over the next 20 years. They provide a range of support to account managed businesses active in the marine energy supply chain and are actively encouraging more businesses to grow into the sector. A dedicated program of marine supply chain support for Scottish companies is in development and the enterprise agencies stand poised to continue investing in the skills, capabilities and supporting infrastructure required to prepare for and achieve commercialisation of the sector.

Infrastructure

5.9. The North of Scotland has already seen significant new port infrastructure since 2010, with over £90m investment secured in ports in Orkney, Caithness, Highland, Argyll and the Western Isles, with the bulk of this expenditure focused on meeting the needs of the wave and tidal industry. It is heartening that these investments are now meeting the requirements of the industry in Orkney and Caithness, and providing developers with real deployment options. The National Renewables Infrastructure Plan 3 is currently assessing the need for any further infrastructure investment that may be needed. While existing port investments are likely to meet near term needs, there may be a need for development of further bespoke onshore facilities to support early stage array deployment.

5.10. There are currently plans to invest around £14m in further bespoke onshore infrastructure in Orkney to support early array deployment and to underpin existing port investments there. This is in addition to the £3m already invested in forward supply units for EMEC's tidal test site. Enterprise Area status which provides business rate discounts/enhanced capital allowances, has been awarded to four ports in northern Scotland where recent investments have been made to support the marine renewables sectors.

5.11. Plans are well progressed to develop a new £3m Stromness (Orkney) campus to house further research facilities, commercial accommodation for marine energy developers, further EMEC accommodation and to support knowledge activities around the marine energy sector.

EMEC

5.12. Total investment in the European Marine Energy Centre (EMEC) sits at £35.5m. All fourteen of EMEC's current full-scale test berths are contracted to developers cementing the UK's position at the forefront of marine energy development and deployment. Activities at the facility support 240 jobs across the UK.

Marine Energy Park (MEP)

5.13. In 2012 the Pentland Firth and Orkney Waters area was designated as a Marine Energy Park (MEP) – the first for Scotland and second in the UK to the Southwest Marine Energy Park. Since then, the two MEPs have been working closely together to make the case for sustained support for marine renewables in the UK, encouraging collaboration and accelerating learning amongst UK supply chain companies to meet the demands of an industry preparing for commercialisation.

Planning

5.14. The Scottish Government's National Planning Framework 3, Main Issues Report, highlights the importance of the development of wave and tidal sectors by proposing that all onshore infrastructure required to support Pentland Firth & Orkney Waters MEP projects be designated as National Developments.

Annex A - Summary of responses to Scottish Islands consultation

1. Do you agree with the analysis in Baringa/TNEI report and other sources quoted in this consultation and the conclusions drawn from it? Please provide evidence to support your answer.	Yes - 19 No – 5
2. Do you agree with our proposal to provide additional support to projects located on the remote Scottish islands where such a project meets the objectives in paragraph 1.21 and have all of the characteristics described in paragraph 1.25?	Yes – 20 Yes, but WI should get higher price than Orkney/ Shetland - 2 No – 3
3. Do you agree that the Scottish islands comprising the local government areas of Comhairle nan Eilean Siar, Orkney Islands Council, and Shetland Islands Council are unique in being able to develop projects which have all of the characteristics described in paragraph 1.25? Do potential projects on the Scottish Islands have other relevant unique characteristics which warrant additional support?	Yes – 22 No - 2
4. Do you agree with our proposal that additional support should be limited to onshore wind projects, and that the level of support should not exceed that available for offshore wind? In this context how do you consider pre-commercial technologies such as wave and tidal stream should be treated? Please provide evidence to support your answer.	No, marine should also get increased price on islands - 21 Yes - 1
5. Do you agree that the appropriate vehicle for providing additional support for onshore wind on the Scottish islands (comprising the local government areas of Comhairle nan Eilean Siar, Orkney Islands Council, and Shetland Islands Council) is by a specific CFD strike price within the first EMR delivery plan?	Yes - 21
6. Do you agree with the proposal to provide a strike price for island onshore wind projects having the characteristics, described in paragraph 1.25, of £115 per MWh beginning in 2017/18, compared with £95-100 per MWh for onshore wind elsewhere in the UK? Please provide evidence to support your answer.	Yes – 5 Yes, but separate price for each island group/price too low - 13 No – 2
7. Do you agree that we should not provide additional support for wave and tidal within the first delivery plan? Do you agree that the need for and levels of additional support for marine energy should be considered as part of the second EMR delivery plan (subject to progress towards early-commercial deployment)?	Yes – 1 No - 17

Main points made

Onshore Wind

A strike price of £115/MWh will enable deployment of onshore wind on the Scottish islands. A higher strike price for the WI would bring forward more generation, a 132MW wind farm which is ready for construction. This would still be cost-effective at £135/MWh as offshore wind will cost £140/MWh in 2017/18. The LCF cap is not threatened now that there will be no nuclear until later.

Price should be revisited once transmission costs are known, turbines have been selected, energy yield assessments completed and cable supply contracts signed. SHE-T should take pipeline projects into account when considering link to Western Isles (and extend capacity to 600MW). Phased commissioning should be applied to projects larger than 100MW.

Should not be restricted to large-scale projects. Fear potential for higher transmission charges than anticipated. DECC should consider the grid outage compensation arrangements and whether grid technology risk is best placed on the generator. Recommend minimum £120/MWh for Orkney and Shetland and £125/MWh for the Western Isles, assuming that link costs do not increase any further and the same uplift for marine projects. Assurances for projects to be deployed in the second delivery period need to be given.

Marine

Island “uplift” should cover TNUoS charges, as yet unknown, and apply to both onshore wind and marine technologies. The marine sector needs positive signals from government that there will be a long-term market for this technology.

Evidence presented to the marine Energy Programme Board asserted that every £1 of grant money offered to major technology developers has leveraged more than £6 of private sector investment.

Disagree that jobs created would displace those elsewhere as significant investment already made in Orkney where locals have been recruited.

Marine should be included in the first delivery period. There should be a separate, technology-neutral price for each island group.

DECC should demonstrate and communicate to industry that transmission charges have been adequately factored into marine strike prices.

Other

Isle of Wight faces similar grid problems and should therefore benefit from higher strike price. The strike price for tidal stream projects based on the Isle of Wight should be set to £400/MWh and introduced within the first delivery plan period.

The opportunity for benefiting from this proposal should not be restricted to the three island councils but should include Argyll and Bute particularly in regard to future wave, tidal and off shore wind.

A very specific set of criteria should be applied beyond onshore wind in these specific geographic areas and could be attributed to other projects in other regions across the UK, specifically some R3 offshore wind projects.

Strike Price degression must take fuller account of anticipated asset sharing, and the lower development costs that would prevail following the initial investment in enabling infrastructure by first mover projects.

Annex B – List of respondents

2020 Renewables Limited
Amec
Aquamarine Power
Argyll and Bute Council
Brough Head Wave Farm Ltd
Cat Gulliver
Comhairle nan Eilean Siar (Western Isles Council)
EdF
European Marine Energy Centre
Fairwind Orkney Ltd
First Flight Wind Limited
GDF Suez
Highlands and Islands Enterprise
Lewis Wind Power
Muaitheabhal Community Windfarm Trust (MCWFT)
Orkney Islands Council
Pelamis Wave Power Ltd
Perpetuus Tidal Energy Centre
Renewable Energy Association
Renewable Energy System Limited
Renewable UK/Scottish Renewables
RSPB Scotland
RWE npower renewables
Scottish Council for Development and Industry
Scottish Power
The Crown Estate
Uisenis Power
Vic Drosso
Viking Energy

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