

Consultation on treatment of non-mainland GB onshore wind

Introduction

1. Scottish Renewables has worked in partnership with the UK and Scottish Governments, the islands councils, and project developers over many years in order to create the conditions that would allow the delivery of large scale renewable energy projects on Scotland's islands – home to some of the strongest renewable energy resources anywhere in Europe.
2. Despite more than a decade of work on this issue, developers and communities have been unable to deliver projects on the islands due to the lack of connections to the GB transmission network and the grid-charging methodology which means that individual projects will be liable for the costs of delivery of these connections.¹ These costs have been estimated to result in overall grid charges up to 7.5 times greater in Shetland² than the north of Scotland,³ and up to 9 times more expensive than the GB average,⁴ for example. This means that projects with consent and strong local support have not proceeded, despite the UK Government committing “to enabling deployment of renewable energy on Scottish islands”⁵ and concluding that islands wind is a ‘special case’.⁶
3. As a result the UK is missing out on cost-competitive renewable energy which could contribute to meeting our 2030 climate change targets at lowest cost, while our island communities are missing out on the economic and social benefits that could be delivered by large scale renewable energy development.
4. We believe it is incumbent on UK ministers to break the current impasse which is working against wider ministerial and national objectives, and against local communities’ desire to be part of the renewal of the UK’s ageing energy infrastructure.
5. Finally, we would like to stress that we believe it is crucial that the decision on this consultation does not delay CfD allocation round 2 from its current timetable.

Onshore Wind

6. Before and separately from addressing the question of non-mainland onshore wind, Scottish Renewables would like to state its concern with the statements made with respect to mainland onshore wind in paragraph 2.2 of this consultation.

¹ CAG (2017) [Update to Grid Access Report](#)

² CAG (2017) [Update to Grid Access Report](#)

³ National Grid (2016) [TNUoS tariff forecasts](#)

⁴ SSE Generation Ltd, Response to BEIS consultation on treatment of non-mainland GB onshore wind

⁵ Andrea Leadsom MP, then Minister of State for Energy and Climate Change (2015) [House of Commons Daily Hansard](#)

⁶ DECC (2014) [The Government response on the use of technology groupings, minima and maxima](#)

7. In the noted Secretary of State's 2015 speech,⁷ it was made clear that "no form of power generation, not even gas-fired power stations, can be built without government intervention." Thus there is a clear need to redefine the benchmark against which new generation is considered subsidised or not. In the case of onshore wind, that comparator should be new-build CCGT as argued by the Committee on Climate Change (CCC)⁸ and Policy Exchange.⁹
8. Bloomberg New Energy Finance,¹⁰ the NAO¹¹ and BEIS¹² have all confirmed that onshore wind prices are now lower than new CCGT and therefore a CfD auction clearing price below this pre-defined benchmark could not be considered subsidised.
9. Secondly, there is a need for Government to make clear its vision for an investment signal beyond short term public procurement measures. In analysis recently published by BEIS,¹³ its power sector scenarios to 2030 show growth only in those technologies offered a route to market by Government, namely, offshore wind and nuclear, as well as interconnection.
10. Putting aside interconnection as a different class of asset, the scenarios assume that the Department considers the absence of a route to market to continue to at least 2030. This denies the UK consumer access to the cheapest new technologies at a time when significant new capacity is required.
11. Finally, the Government has confirmed that any competitive auctions held in this Parliament can only start delivery from 2020/21.¹⁴ Therefore, it is now the 2030 carbon targets that are relevant – not the 2020 targets that cannot be affected by new Government action. The CCC's recent progress report has clearly stated that further Government intervention is required to meet legally binding objectives – including the continuation of CfD auctions.¹⁵

Consultation Question 1: Should non-mainland GB onshore wind be considered a separate technology from onshore wind more generally?

12. We believe that non-mainland GB onshore wind projects must be treated differently from onshore wind more generally due to their substantially higher grid costs. The islands projects will only be delivered with government intervention to ensure a viable business case for developers and communities.
13. The reasons for this are set out below.

⁷ Amber Rudd MP (2015) [Policy reset speech](#)

⁸ Committee on Climate Change (2015) [Power Sector Scenarios for the Fifth Carbon Budget](#)

⁹ Policy Exchange (2015) [Powering Up: The future of onshore wind in the UK](#)

¹⁰ Bloomberg New Energy Finance (2016) [subscription-only analysis](#)

¹¹ National Audit Office (2016) [Nuclear Power in the UK](#)

¹² BEIS (2016) [Electricity Generation Costs](#)

¹³ BEIS (2016) [Unabated coal closure consultation](#)

¹⁴ BEIS (2016) [Policy Paper: Contract for Difference](#)

¹⁵ Committee on Climate Change (2016) [Meeting Carbon Budgets – 2016 Progress Report to Parliament](#)

Unique Characteristics

14. It is clear that non-mainland onshore wind developments would have many unique characteristics. The two most fundamental of these are:
- The significantly higher grid costs and up front liabilities that the projects would incur
 - The significantly higher load factors that the projects will deliver compared to mainland wind
15. These two factors have been evidenced by a number of studies by and behalf of both the UK and Scottish Governments.
16. For example, the Impact Assessment produced as part of the UK Government's Consultation on Additional Support for Scottish Island Renewables¹⁶ concluded that:
- Load factors on Scottish islands are 25-57% higher than UK average, yet the onshore wind resource potential on the islands remains largely untapped at present
 - Scottish islands have very limited grid connections
 - Transmission network charges are expected to be 10 - 20 times higher, compared to charges applying elsewhere in the UK, as a result of building new connections.
17. These issues have not changed, and it is our view that non-mainland onshore wind projects would require to be treated distinctly from mainland onshore wind projects if they were to be able to compete in a CfD auction.

Additional evidence

18. There are a number of additional areas that we wish to highlight in this consultation.

Public support

19. All three island councils are firmly in support of enabling wind development in their respective regions, recognising the potential to secure the benefits of this vast resource:
- **[Comhairle nan Eilean Siar](#)**: Wind energy is central to the Western Isles Council economic strategy with plans for 500MW of onshore wind and 50MW of community-owned generation consented or operational by 2015 currently undermined by the lack of grid connection to the UK mainland.
 - **[Shetland Islands Council](#)**: The Council's strategy and vision aim to use renewable energy (including island wind) to "enhance the quality of life in Shetland for future generations", protecting consumers from the "vulnerability to the price of finite fossil

¹⁶ DECC (2013) [Impact Assessment - consultation on additional support for Scottish Islands renewables](#)

fuels”, rejuvenating peripheral communities and “contributing towards Scottish, UK and EU targets for carbon reduction”.

- **[Orkney Islands Council](#)**: The Council’s Plan clearly identifies renewables as a top priority and sets out ambitions to make the best use of energy resources and opportunities, increasing grid connection with affordable charges, as a means of eradicating fuel poverty and to creating opportunities for a skilled, highly trained workforce in Orkney.

20. Overall, public support for wind energy is higher than it has ever been with the Government’s own ‘public attitudes survey’ highlighting that 70% of people back further development of wind energy.¹⁷ While the level of local public support for increasing interconnection with the GB electricity system is higher still with 94% of residents on Orkney in favour of upgrades to the grid¹⁸.

Economic Benefits and Industrial Impacts

21. In March 2016 the Scottish Government commissioned consultants Baringa to provide independent analysis of the economic opportunities that could be available to the Scottish islands through further development of renewable energy.¹⁹ The report identified potential for 1GW of renewable energy deployment by the early 2020’s, increasing to 1.4 GW by 2030, and that delivering this increased level of deployment could result in:

- Benefits to the island economies of up to £725 million (gross value added)
- Community benefit payments of up to £230 million, paid directly to local communities
- An additional 5% increase in the island economic output during the peak development phase
- The potential for valuable revenue streams worth up to £43 million per year through equity stakes in island generation projects
- Up to 2,000 jobs created during peak development.

22. These economic benefits go beyond the island communities alone. It is estimated that 50% of spend will go to the UK supply chain.

23. All of that is entirely consistent with the ambition set out in the UK Government Green Paper Building our Industrial Strategy to ‘deliver a stronger economy and a fairer society – where wealth and opportunity are spread across every community in our United Kingdom’.²⁰

¹⁷ BEIS (2016) [Public Attitudes Tracking Survey: Wave 19](#)

¹⁸ ComRES (2017) [Orkney Renewable Energy Forum Energy Survey](#)

¹⁹ Baringa (2016) [Economic Opportunities of Renewable Energy for Scottish Island Communities](#)

²⁰ BEIS (2017) [Building Our Industrial Strategy](#)

Cost

24. In line with the UK Government's expectations for cost reduction in the offshore wind industry, non-mainland projects are now benefitting from lower cost of capital than assumed when the remote island strike price was set at £115/MWh in 2014. Therefore, it is increasingly viable that non-mainland projects could be delivered at a lower strike price than initially assumed, and drive competition with other technologies.

Diversity

25. Geographical dispersion is an important factor in helping to smooth peaks and troughs in output from variable generation. With this in mind, there is a significant benefit to be gained from connection to more remote parts of the country with a greater probability of experiencing high wind output at times of lower output across the rest of GB.

Opportunity

26. Connections to the Scottish islands secured through the delivery of island wind would represent opportunity beyond wind generation alone. The UK is firmly at the forefront of the global 'Ocean Energy Race',²¹ however the capacity of our greatest marine energy resource surrounding the Scottish islands is entirely constrained by the ability to take that power to market. Facilitating connections to the GB electricity market would firmly place the foundations for a thriving marine energy sector to grow.

Consultation Question 2: We would be interested to hear if you believe there are specific barriers/costs/issues associated with non-mainland GB onshore wind? If you believe there are, please provide evidence.

Grid Charges

27. As set out above, none of Scotland's main island groups is connected to the GB transmission network.

28. The rules governing grid connections mean that the full capital costs of the subsea cables required to connect the islands will be met by projects on the islands. The latest projections for grid charges on the islands, and the different components of these charges are set out below.²² The table also contains a comparator for the charges incurred by a mainland onshore wind project in the north of Scotland.

²¹ [Ocean Energy Race](#)

²² Scottish Government (2017) [Islands CFD Consultation – Grid Access Refresh](#)

Table 1 Annual Grid Connection Costs for Scotland's Islands and Zone 1 Scottish Mainland (£ per kW of connected capacity)

Location	Local Circuit	Wider	Substation	Total
Western Isles	98.5	17.87	0.44	116.81
Shetland Isles	115.81	17.87	0.44	134.12
Orkney Islands	62.17	17.87	0.44	80.48
North of Scotland	2.48 ⁱ	17.87	0.40	20.75

i) Based on local circuit values for Strathy North Wind Farm, North of Scotland, National Grid, TNUoS forecast 2020/21

29. For the purposes of illustration, this means that Viking Energy's annual grid connection charges will be in excess of £61m per annum, compared to an annual charge of £9.5m for a similarly-sized wind farm located in the north of the Scottish mainland.

30. This is clearly a significant economic disadvantage and demonstrates why no developer has taken forward a transmission-connected project on the islands, despite a number of schemes having planning permission and strong public support.

31. Projects on the islands do have higher load factors than mainland onshore wind, however, the additional revenue generated is not sufficient to overcome the hurdle of the significantly higher grid charges. The table below sets out the annual charges that would be incurred by each of the wind farms with consent on Lewis and Shetland, with comparative figures for the same capacity connected to the mainland GB transmission network in the north of Scotland.

Table 2 Projected grid charges for consented islands wind projects and comparators for the same capacity in north of Scotland

	Consented Capacity	Projected Annual Grid Charges (£)	North of Scotland Comparator ⁱ (£)
Stornoway Wind Farm	180MW	21,025,800	3,735,600
Tolsta	42MW	4,906,020	871,500
Uisenis Wind Farm	162MW	18,923,220	3,361,500
Viking Energy	456MW	61,158,720	9,462,000

i) Based on local circuit values for Strathy North Wind Farm, North of Scotland, National Grid, TNUoS forecast 2020/21

32. In summary, we believe that these charges are a clear and unequivocal barrier to development of renewable electricity generation on Scotland's main islands. And it is for these reasons that previous ministers and secretaries of state have pledged to

intervene to ensure a viable economic framework to support investment in these areas.^{23, 24, 25}

Additional Barriers

33. In addition to the substantially higher annual grid costs, there are two other challenges to development of projects on the islands.

Commercial Risk

34. Projects connecting to the network on the Scottish Islands will be exposed to a range of commercial risks.
35. Island connections, for economic reasons, are not designed for full redundancy with only very limited compensation available for outages due to their treatment as 'local works'. This means that generators are required to take on significant risk on the availability of the links with limited control or influence.

Liability

36. Just as developers are faced with higher annual grid costs, so they will be required to post higher securities against the delivery of grid connections, which are proportionate to the capital costs of the required works.
37. These additional barriers add to the cost of development over and above the annual grid charge.

Consultation Question 3: If you have set out any specific challenges for non-mainland GB onshore wind projects, do you consider there to be other measures outside the CfD scheme that could be adopted by the Government, or others, to remedy those challenges? What would these measures be?

38. The fundamental barrier to non-mainland GB onshore wind projects is the significantly higher cost of connecting to the transmission grid that the projects must meet from operating revenues.
39. Until now, government policy has been to ameliorate the impact of these charges through a higher strike price for Remote Islands projects than mainland onshore wind and for these projects to compete in the less established technologies Pot in CfD allocation rounds.
40. One alternative would be for government, Ofgem and/or National Grid to revise rules which place the cost of island connections solely on island generators.

²³ DECC (2014) [The Government response on the use of technology groupings, minima and maxima](#)

²⁴ Andrea Leadsom MP (2015) [House of Commons Daily Hansard](#)

²⁵ Scottish Government (2015) [Ministerial Working Group welcomes islands commitment](#)

41. However, this has been ruled by previous secretaries of state, and we have seen no indication of any support for this within Ofgem.
42. It is also clear that such a change would require modifications to existing grid codes, a process which can take many years and which itself could be subject to legal challenge.
43. And whilst it would reduce or remove the differential in grid charging with the mainland, it would leave the islands projects in the same situation as mainland onshore projects which currently lack the opportunity to bid for a CfD, and which therefore have no route to market.
44. As such, there is little appetite amongst developers and local communities to re-visit the rules which govern the attribution of the cost of the required grid connections, and strong and clear support for the introduction of a Remote Islands CfD.
45. It is also recognised that government would require to actively manage the introduction of a Remote Islands CfD to ensure that this delivers outcomes consistent with the overall Electricity Market Reform process, including the challenge of creating appropriate competitive tension rather than simply displacing capacity from other technologies.
46. It is important that ministers consider carefully how best to remove the very real barriers to investment in non-mainland onshore wind projects in a way which strengthens wider confidence in the framework to support investment in renewable energy in the UK.
47. However, we believe that these barriers can be overcome in a way that delivers positive and significant gains for government's overarching goals to tackle climate change, keep down bills for consumers and grow the industrial impacts of the transformation under way in our energy sector.