18 April 2023

EDF Renewables response to Scottish Parliament's Net Zero, Energy and Transport Committee inquiry on energy infrastructure and energy targets

Dear Sir or Madam,

EDF Renewables is one of the UK's leading renewable energy companies, specialising in onshore and offshore wind power, solar and battery storage technology. Working closely with our research and development division, we're developing future innovations, including hydrogen technology. We're also investing in decarbonising the UK's transport sector and developing vital power infrastructure for charging electric vehicles.

We have 10 operational onshore wind farms in Scotland consisting of around 500 MW. We have another 1.5GW in the planning and development. In 2022 in Scotland, more than £1million was awarded from our wind farm community benefit funds to over 209 projects including 115 education and training bursaries.

We welcome the opportunity to submit our views on Scotland's energy infrastructure and energy targets.

Should you wish to discuss any of the issues raised in our response or have any queries, please contact Ruth Shewan

Yours sincerely,

Ruth Shewan
External Affairs Manager for Scotland
EDF Renewables UK

1.0 Introduction

The Scottish Government has a crucial enabling role to play in order to unlock the further potential for renewable generation in Scotland. The main challenges for development of renewables are planning, access to grid and route to market.

The grid challenges faced in rural areas of Scotland are creating issues in the deployment of renewable energy and the potential for new developments, thus creating a barrier for those in remote Scotland to accelerate and achieve net zero ambitions.

Scottish Government has a role in communicating the need for more transmission capacity to the National Grid ESO and Ofgem and we would encourage Scottish Government to do so.

As we are all well aware, not taking action to address climate change is not an option. We need to accelerate our efforts to net zero and an integral part of achieving this is building electricity infrastructure which is fit for purpose, now and in the future, and allows us to reach our renewable energy ambitions.

In order to reach the targets we urgently need investment in grid capacity at both a transmission and a distribution network level.

2.0 Electricity infrastructure in Scotland

It is critical there is a step change in network investment this decade to enable us to meet net zero by 2045. We note that Scotland's technology targets are focussed on installed capacity and it will be crucial to prevent a scenario where the projects providing the capacity are available, but the network infrastructure has not connected the renewable generation.

There is great need for delivery parties to deliver more grid capacity more quickly and for this to be closely monitored, to enable us to meet the ambitious government targets.

No matter what the future market design may be, we know we will need significant grid infrastructure investment to connect the new low carbon generation needed for net zero. We also know where much of the new generation will be located.
Ofgem needs to enable anticipatory investment in new grid, otherwise lack of connected capacity could delay net zero delivery.
We are already seeing slow delivery by transmission owners impacting our current pipeline, with grid connection delays impacting on both our CfD projects.

Key areas for consideration by the Committee:

i) suitability of the different electricity technologies that the Scottish Government wants to play a role in future energy supply

There is a growing emphasis being placed on the importance of self-reliance and security of supply when it comes to energy generation.

A diverse mix of renewable energy technologies, including onshore wind, has a critical role to play in ensuring energy security. In addition, increasing our renewable

generation capacity will reduce the amount of gas-fired electricity generation that we need, helping to decouple electricity prices from high gas prices.

ii) the relationship between technologies (e.g. intermittent renewables, pumped hydro, battery technologies, hydrogen etc.)

We welcome the ambition for at least 5GW of hydrogen production by 2030 and 25GW by 2045 in Scotland. The £90million Green Hydrogen Fund announced in the Scottish Hydrogen Action Plan is also welcome. EDF Renewables is currently assessing options within our portfolio for potential hydrogen projects that could bid into the fund.

While the Green Hydrogen Fund will incentivise production and supply of green hydrogen, we believe that emphasis also needs to be placed on Scottish Government supporting a demand case for offtakers of green hydrogen. Scottish Government should identify where they see the green hydrogen produced in Scotland being used and what the current gaps or barriers preventing expansion of demand are. For example, it would be useful to set out what infrastructure is already available to utilise for green hydrogen and what needs to be built to facilitate it. This should be carried out in a timely manner to support the ambition for developers to build projects quickly.

The potential for reduction in low carbon hydrogen production costs, coupled with the growth in hydrogen vehicle model types and utilisation, presents an opportunity for hydrogen to be deployed at scale as the alternative zero emissions fuel to decarbonise heavy transport. We see it as encouraging that the Scottish Government, in its Hydrogen Action Plan, is supporting developments to scale up the production of hydrogen and recognises its potential as a transport fuel.

Currently, a significant barrier to battery storage deployment in Scotland is the disproportionate TNUoS charging, which does not reflect the benefit to the electricity system that battery storage provides. We are currently awaiting the reclassification of storage to be progressed through the Energy Bill, which should define battery storage as either a subset of generation (and not included within conventional carbon), or as a standalone asset class.

iii) these technologies' compatibility with the current and planned electricity network

Wind capacity alone is forecast to quadruple this decade with investment decisions for the majority of projects yet to be taken[1].
We know there is great demand on the electricity network in Scotland, but to achieve net zero, efforts need to be accelerated and significant investment needs to be made in infrastructure. It needs to be made fit for purpose, not just for projects in the current pipeline but also for those, of all technologies, in the future.

In order to realise Scotland's potential as a leader in renewable generation, necessary grid infrastructure investment must be carried out to facilitate Scotland's renewable energy ambitions and connect the renewable capacity to the transmission system.

[1] National Grid Electricity System Operator's **2022 Future Energy Scenarios**

iv) the regulatory regime within which they operate

An integrated approach to new grid will minimise costs to the consumers. Developer led grid has a role to play, but the core of the system needs to continue to be centrally delivered.
Current transmission charges are unpredictable and very challenging for investors to account for.
More predictable charging for future grid should be a high priority, with grid charges set out at least 10 years in advance.

Transmission Network Use of System (TNUoS)

The Transmission Network Use of System (TNUoS) charging regime is a significant barrier for the deployment of renewable generation, particularly in northern UK areas and is not providing the right signals to developers. There are two key issues: unpredictability and the high charges faced in Scotland in comparison to the rest of the country.

TNUoS charges are currently published annually with a five-year time horizon, however these forecasts have been known to change dramatically and are therefore adding to unpredictability in the investment of renewables in Scotland. Reform is important now given the scale of low carbon generation deployment this decade.

Further to this, the system as a whole is currently disincentivising investment in northern areas of the UK. Today, the UK has one of the highest locational charges in Europe and it is one of the few countries that charges a locational element for transmission charges. This is putting UK generators, particularly in Scotland, at a disadvantage to European generators which currently do not pay for using the Great Britain Transmission System.

TNUoS charges can account for up to 30 per cent of the developer's costs. Currently finalised charges are only known one year in advance. Investment of billions to reinforce the network is very difficult to forecast by developers, which causes further investment uncertainty.

EDF has raised a formal industry modification (CMP413: Rolling 10-year wider TNUoS generation tariffs) to ask ESO to provide this forward looking forecast, to enable better investments from low carbon developers. Subject to the outcome and decision on this modification, a more holistic review of the charges and whether they are fit to deliver net zero may be needed.

Nodal pricing

Nodal pricing is currently under consideration as part of long-term market reform. Whilst it has theoretical benefits, it is not clear that these would be achieved in practice and the change will create a significant uncertainty and associated risks to investors. More pragmatic reforms should be considered as alternatives to nodal pricing, as these may be able to deliver significant benefits with less uncertainty.

Furthermore, long timescales for delivery would result in the reform for nodal pricing being introduced after investment decisions in renewable generation need to be made to meet UK Government targets of all electricity generation from clean sources by 2035. There are low-regret actions that could be taken now which could improve locational signals within the existing market framework and these should be prioritised.

Local Market Constraints

Locational dispatch signals could be improved by developing ESO's Local Market Constraints. These Local Market Constraints are currently costing the consumer ~£1bn a year and this is expected to increase before transmission investment is delivered later this decade.

While the key issue is transmission investment and the scope to reduce transmission constraints is limited, the ESO is proposing a Local Constraint Market to access smaller scale flexibility at times of high wind. This will provide some level of mitigation and is welcome but should be expanded to encourage locational flexibility.

v) whether the current planning system is geared to support and enable development of the infrastructure we will need within the right timeframes to reach net zero

We welcome the latest draft of the Scottish National Planning Framework 4 (NPF4), which addresses many of the concerns that developers had and strikes a fair balance. We wholeheartedly support the Scottish Government's clear backing for renewable energy by placing significant weight on the contribution of development proposals to renewable energy generation targets and greenhouse gas emission reduction targets in NPF4. We look forward to continuing to engage with the Scottish Government on further improvements to NPF4, engaging via Scottish Renewables and the Scottish Government Planning Performance – Applicant Stakeholder Group.

We also strongly recommend the introduction of fixed maximum planning determination timescales, or as a minimum, statutory longstop periods for key stages. This is to ensure that applications for new net zero energy infrastructure are determined in a timely fashion and to provide increased predictability and accountability for all parties, with broadly consistent timescales.

Appendix 1

About EDF Renewables UK

We're one of the UK and Ireland's leading renewable energy companies, developing, building, operating and maintaining innovative wind, solar and battery storage projects. We have 38 operational sites – that's just over 1 GW and we're planning to build five times what we already have in operation and to do that responsibly and sustainably.

In Scotland we have 10 operational onshore wind farms of 500MW capacity, with a further 1.5GW in planning and development. Our offshore project – 450MW Neart Na Gaiothe in the Firth of Forth is due to be online later this year.

Working closely with our research and development division, we're developing future innovations, including hydrogen technology. We're also investing in decarbonising the UK's transport sector and developing vital power infrastructure for charging electric vehicles.

We're passionate about creating a future where clean, low carbon energy is accessible and affordable for everyone and we want to do this as quickly as we can. By helping individuals, communities and businesses to become greener, we're playing our part in our shared mission to transform the economy and create new sustainable employment.