

Written evidence submitted by ABB

Introduction

ABB welcomes the Environmental Audit Committee's important inquiry into offshore wind and is pleased to submit the following written evidence. Our submission covers a number of key areas of the offshore wind sector, including:

- The challenges involved in securing more UK content in wind farms, as envisioned in the Offshore Wind Sector Deal, and the insularity of some regional clusters;
- The opportunity to develop the UK's offshore wind service capability through nurturing the required skills as well as reskilling those moving from related industries (e.g. offshore oil and gas);
- The opportunities and benefits involved in further digitalisation of offshore projects;
- The need to minimise distances of onshore cabling from offshore arrays, through better coordination between developers and the system operator in locating developments; and
- The potential for a more efficient offshore transmission network through more coordination and collaboration between projects.

About ABB

ABB is a pioneering technology leader in power grids, electrification products and robotics, serving customers in utilities, industry, transport and infrastructure globally. We are helping utilities in the UK and around the world to navigate the transformation of the energy system and are leading the way towards a cheaper, cleaner and more secure future energy system. Our technology for the offshore wind power industry is essential in the transmission of high-quality power with minimal loss. We delivered the transmission link for the world's largest capacity offshore wind farm, Hornsea Project One, in the North Sea and are involved in many of the current projects.

More broadly, ABB provides products, systems and service solutions that not only enhance our customers' businesses, but also lessen their environmental impacts, through improved energy efficiency and increased industrial productivity. We operate in 22 sites across the UK, from Aberdeen to Andover, where products are manufactured, sold, serviced or engineered.

Call for evidence submission

- 1. How effective has the Government's offshore wind Sector Deal been in moving the sector towards becoming an integral part of a low-cost, low-carbon, flexible grid system and boosting the productivity and competitiveness of the UK supply chain?**

ABB welcomes the growth of the UK offshore wind sector and the aims of the sector deal. There are two aspects of the sector deal where further improvements would be welcome.

The first relates to the ambition within the sector deal to achieve total lifetime UK content of 60% by 2030. The offshore wind sector and supply chain is global in nature, and many of the main technologies are manufactured overseas, from converter stations to turbines. If the Government wants to see more UK manufacturing in the sector, more incentives will be required to make it attractive, particularly to larger sector companies like ABB that may want to invest. Any companies attracted to establish manufacturing bases in the UK will want confidence that they can export easily, as the UK market is unlikely to be sufficient for a business on its own. One example of where government has successfully provided effective, targeted incentives was for the Siemens wind turbine blade manufacturing plant in Hull. Manufacturing is not the only value-added activity in the offshore wind value chain as scheme development, project engineering, software development, construction and ongoing services are all important specialist areas that should also be supported and can create significant export opportunities.

The second aspect relates to the operation of regional clusters. Government's efforts to bolster regional clusters as part of the Sector Deal are welcome, however, we are concerned that some clusters are becoming overly siloed and are in some cases restricting participation only to companies based in the specific local area. We understand that the aim of clusters is to bring local business together to boost productivity, but we do not believe this should be at the exclusion of other companies that can make a valuable contribution to the sector, just because they come from a different region. Furthermore, there is a sense that clusters around the UK are at times in competition rather than working alongside one another, to boost the overall UK sector.

2. What level of output can the sector deliver in the UK, and what Government support would be needed to achieve this?

There is an enormous opportunity for further technology development in offshore wind when one considers the scale of what needs to be achieved in order to achieve net zero. For example, there will need to be further technology development in larger turbines, asset management services, floating offshore arrays, converter technology and the offshore electrical network that ties it all together. Benefitting from the opportunity is challenging as many of the key companies in the offshore wind market are operating outside of the UK, including developers and technology companies. However, because the UK market is a key driver of demand in these technologies, these organisations have a high degree of interest in the UK. As set out in our answer to question 1, improved incentives to carry out the development, manufacturing or servicing in the UK would attract more investment.

Increasing the UK skills base of specific offshore wind skills would certainly do more to develop our service capability. The offshore oil and gas sector was successful in strengthening specific skills and many of the necessary skills are transferable, but there remains a need to focus on bringing new people into the sector. The UK market provides the potential to develop and deploy those skills that can then be exported as other countries grow their offshore wind markets. However, there needs to be a bigger focus from Government on nurturing the required skills as well as reskilling those moving from related industries.

Another important area to maintain, in order to attract ongoing investment in the UK sector, is the visibility of future new developments and the uninterrupted schedule of CfD auctions to allow long term investment and resource planning.

3. How might the UK take advantage of further technological advances in offshore wind technology, particularly in relation to floating arrays?

The committee is right to single out floating arrays. It is clear that once sites with water depths up to 40m are exhausted, it will no longer be feasible to build wind farms on the seabed, making floating wind projects absolutely vital. Support for floating wind R&D projects could also have wider benefits in terms of exports, given the requirements around the world to build offshore capacity in water depths of up to 200m. The Government therefore needs to allow floating arrays to prove capabilities and achieve the same cost reduction curve as other wind projects.

Digitalisation will also play an important role in improving the efficiency, availability and operating life of assets in the sector. The Government should encourage the sector to adopt digital solutions and sensors and to leverage the data that comes from them to drive improvements. Asset management systems and services is one area that could readily be developed in the UK.

4. What support does the sector require to keep pace with the most cutting-edge innovations, such as in blade technology?

As discussed in the previous answer a focus on digital adoption and the development to asset management systems and services is needed to ensure adoption of these important new technologies.

5. What is the UK industry doing to promote the sustainability of offshore wind arrays throughout their entire life-cycle from development through to decommissioning, and to improve maintenance and end-of-life repair?

We believe that digitalisation is vitally important for the sustainability of offshore wind arrays. Being able to monitor equipment from a distance means not having to go out in ships so often to inspect it, and reducing unnecessary repair and maintenance works, by adopting condition-based maintenance regimes.

The elimination of the greenhouse gas SF₆, traditionally used in electrical switchgear, is an important environmental improvement for the sector as SF₆ is around 24,000 times more potent a greenhouse gas than CO₂. Alternatives are increasingly available to replace SF₆ equipment and their use should be encouraged.

6. How well is the UK industry managing the environmental and social impacts of offshore wind installations, particularly on coastal communities with transmission-cable landing sites?

Onshore cabling has one of the highest social and environmental impacts from offshore arrays, particularly as they affect visual amenity for local communities. Minimising the length of onshore connections will help reduce the environmental impact and this requires joined up thinking between the offshore developers and the TSO.

The number of cable landing sites would be significantly reduced if an offshore transmission network is established, as discussed in the following question.

7. How well is Government policy supporting innovation in transmission technology to improve the efficiency of electricity transmission?

While improving transmission technology for point to point transmission is vital, and is happening with more distant arrays moving to HVDC connections, the key improvement opportunity is to develop an offshore transmission grid. Development of the network will require more coordination and collaboration between projects. A joined up offshore transmission network will provide several benefits; overall lower cost for transmission, higher availability of supply, lower environmental impacts through reduced numbers of cable landing sites and more efficient use of interconnectors.

The UK model of developers taking responsibility for offshore transmission does make development of an offshore grid more difficult to manage and certainly Government has a role in making the development feasible. We welcome Ofgem's inclusion of the regulation of an offshore grid as part of their decarbonisation action plan but would welcome broader Government leadership of a cross sector approach to the grid development. Some key considerations are set out by the Offshore Wind Industry Council in its *Enabling efficient development of transmission networks for offshore wind targets* (2019) report. We note that the benefits of a North Sea grid have long been recognised, but urgent action is needed to actually realise these benefits.

8. Looking to the future, what can the onshore wind sector learn from the offshore success story?

The offshore success story has been related to increasing output and reducing costs through the use of larger turbines, which offer better value for money. This is hard to replicate onshore, where securing planning permission for larger turbines is far more difficult.