

## **Written Evidence submitted by EnBW Generation UK (IND0019)**

*Energy Security & Net Zero Committee call for evidence into delivering the industrial strategy for clean power.*

### ***About EnbW***

EnBW is one of Europe's largest energy suppliers, investing €40 billion by 2030 to drive Europe's transition to clean energy.

In Britain, we are proud to be leading the development of the Morgan and Mona (Irish Sea) and Morven (Scotland) offshore wind farms, working alongside our partners bp and Jera. Together these three wind farms could generate enough energy to power the equivalent of six million UK homes and deliver 20% of the government's Clean Power by 2030 target. Morven is also expected to unlock £10 billion for offshore wind development and the skills and opportunities to support Scotland's energy transition.

Our approach to these investments reflects our unique heritage as a publicly owned utility. Founded a century ago to drive local growth in Germany, we remain 97% owned by the state of Baden-Württemberg and its municipalities. This ownership structure means we invest for decades, not quarters, prioritising societal benefit alongside commercial returns.

This long-term perspective drives innovation: As Germany's only fully integrated green utility, we pioneered the country's first, and latterly, largest offshore wind farm, operate Europe's largest e-mobility network, and are leading the way on hydrogen. We're bringing this innovation to the UK through our offshore wind projects.

Local communities also remain at the heart of everything we do. In Germany, we've managed the coal-to-clean transition with zero forced redundancies. In Scotland, Morven is revitalising the Port of Leith and creating jobs through our Aberdeen operations base.

EnBW strongly supports the UK's world-leading Clean Power by 2030 target and believe this will lead to growth and jobs across the country.

### ***Response to Call for Evidence***

EnBW Generation UK is pleased to respond to the Committee's Call for Evidence (CfE). We have not provided comment in response to all of the questions included in the CfE but have instead focussed on those areas which we see as priorities.

Please find responses to some of the questions below.

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## ***How can UK plc capture its fair share of the economic potential of emerging or less developed energy technologies?***

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Since 2011/12 early, anticipatory and consultative public policy approaches have been recognised in Germany as playing an important role to support new industry creation and deliver a positive impact on jobs.<sup>1</sup>

This approach has enabled EnBW in Germany to rigorously realign our strategy with net zero, committing €40 billion to the energy transition while protecting workers and communities.

In the case of coal phaseout in Germany, this has meant investing in a fuel switch transition which seeks to transform a coal-based energy system to one that supports future fuels like hydrogen.

Rather than wait for the market and technologies for hydrogen to emerge, we are taking a proactive position to stimulate innovation. EnBW is investing an initial €1bn Euros into the hydrogen back bone – a network of pipeline connections enabling the movement of this future fuel across Europe. This is a part of our sister company, Terranets, investing €20bn euros in the broad hydrogen delivery network with state backed guarantees allowing for the fundamental chicken and egg challenge of hydrogen production vs delivery to be tackled through public-private collaboration and a patient capital approach.

A similar approach has been taken in the development of electric vehicle infrastructure in Germany. The rapid acceleration of an e-mobility charging network was seen as a key enabler to the rapid uptake and transition to electric vehicles in the broader German economy. However without the certainty of a market of EVs, few were willing to invest in the necessary charging infrastructure. Again, thanks to the benefits of state ownership, EnBW was able to take a cross-industry, patient capital position to support broader green industrial strategy development and invest significantly in EV charging infrastructure. This helped create the enabling environment, and in turn a competitive advantage, for German automotive OEMs in the region to invest in electric vehicle manufacturing.

GB Energy and the National Wealth Fund could play similar roles in the UK by:

- Taking strategic early positions in key enabling infrastructure;
- Using patient capital to create confidence for private sector investment in emerging technologies;
- Coordinating across government and industry to align investment with industrial strategy priorities;
- And ensuring transitions protect and create high-quality jobs through skills development and worker protections

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<sup>1</sup> [Furnaro et al \(2021\) German Just Transition: A Review of Public Policies to Assist German Coal Communities](#)

***What more can the Government do to encourage greater domestic supply chain investment in the energy industry by 2035, including through the Contracts for Difference scheme?***

EnBW strongly supports the UK's world-leading Clean Power by 2030 target and believe this will lead to growth and jobs across the country. However, de-risking is required to achieve this.

The UK's offshore wind development cycle takes 12 years, but developers lack revenue certainty for 8 of these years while securing seabed leases, permits, and grid connections before they can bid for a Contract for Difference. This extended period of uncertainty makes projects more expensive to finance, reduces the likelihood of securing local supply chain commitments, and increases the risk of projects not reaching Final Investment Decision.

We welcome efforts from government to better integrate offshore wind development by taking a more strategic approach to planning and grid connections. We especially welcome the proposal to develop an Industrial Strategy and 10 Year Infrastructure Strategy alongside the Clean Power by 2030 Action Plan and look forward to consultations over the coming months. The combined package must create a clear roadmap for the fundamental infrastructure policy interventions which will enable the UK's Clean Power by 2030 target to succeed.

Nevertheless, given the bulk of offshore wind delivery is likely to be through AR7 and AR8 in the next two years, immediate intervention is required to pull forward supply chain investment. In our view, reducing financial risk for developers would help firm up supply chain investments. Three areas to consider are:

1. First, securing CfD revenue support earlier in the development process - before full planning consent - would reduce the number of years of pre-revenue uncertainty, enabling firmer supply chain commitments.
2. Second, matching other European markets' 20-year CfD terms would provide revenue certainty for more of a wind farm's 25–30-year operational life, thereby lowering financing costs.
3. Third, REMA's potential shift from national to zonal pricing makes investment planning difficult. Clear grandfathering arrangements and transparent timelines for market changes would maintain confidence, enabling investment.

In addition to reducing financial risk to enable earlier and more confident supply chain investments as per the above, the enabling infrastructure required to deliver wider local supply chain investment, above all ports, also requires government de-risking. The scale of offshore wind demands major port upgrades, but individual developers cannot justify these

investments given project uncertainties and the fact that benefits accrue to multiple users. In our view, Government co-investment in strategic port infrastructure would unlock private investment in manufacturing facilities and present domestic supply chain opportunities in the UK.

***Does the UK have the supply chain capacity to deliver the required energy infrastructure by 2035, including an expanded electricity network?***

The UK has huge potential to become a “clean energy superpower” based on its abundant offshore wind resources and a bedrock of engineering and industrial expertise in offshore operations which can be leveraged to support a successful industrial transformation.

The Offshore Wind Industrial Growth Plan, commissioned by RenewableUK, the Offshore Wind Industry Council, The Crown Estate and Crown Estate Scotland, sets out a case for action to de-risk delivery and maximise domestic market share as we expand offshore wind capacity in the UK. This Industrial Growth Plan (IGP)<sup>2</sup> highlights the enormous potential for the UK to be a global leader in technologies, identifying five key technology areas in which the UK should prioritise investment to secure value for UK industry. These include:

- the design and manufacture of offshore wind blades
- turbine towers
- foundations
- cables and other key components
- services for projects here and abroad.

The plan envisages mobilising nearly £3 billion of funding nationwide, with private finance doing the heavy lifting. This will bring a return to our economy of just under £9 for every £1 invested. The IGP provides a comprehensive source to inform policy makers in how best to support the workhorse of our renewable energy transition – the offshore wind sector – and presents multiple intervention points where the government or Great British Energy could play a decisive role in the success of the energy transition.

Resourcing of the IGP through an Industrial Growth Fund (IGF) is an important factor in the successful delivery of the IGP. This funding landscape is a complex challenge and will likely require contributions from both industry and Government if it is to deliver.

Such joint public private industrial strategic partnerships are well evidenced in the Automotive and Aerospace industries, both having received announcements of additional funding in the Chancellor’s budget last autumn. As yet, no such funding commitment has been agreed for the UK’s offshore wind industry.

Along with fellow industry partners through OWIC and the Trade Associations (Scottish Renewables and RenewableUK) we continue to advocate for a joint approach on offshore

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<sup>2</sup> <https://www.renewableuk.com/news-and-resources/publications/offshore-wind-industrial-growth-plan/>

wind industrial strategy as a means of maximising industrial opportunity and mitigating current and future constraints and shortages in the supply chain.

We also note, however, that the UK alone does not have the supply chain capacity to deliver the required energy infrastructure by 2035, which includes the installation of an additional 28-35GW of offshore wind capacity by 2030. As an experienced offshore wind developer committed to advancing the UK's energy transition in a just, sustainable way, we recognise that without action in some key areas, pressure points and constraints in supply chains could begin to present major risks to project delivery. Left unchecked these constraints in, for example, key components could damage the progress in transitioning to clean energy.

High-voltage direct current (HVDC) cables and switchgear are particularly useful for connecting remote, offshore wind farms to electricity grids due to their lower capacitance losses and more efficient power transfer over long distances. The government's Clean Power Action Plan acknowledges that "the supply chains for HVDC cables are tight" and that this presents risks to interconnector projects, highlighting in turn that it aspires to build domestic capacity in the manufacture of HVDC cables.

The "tight" supply chain also presents risks to offshore wind developers as the system that UK offshore wind operates under requires the developer of a site to take on responsibility for developing the transmission assets required to connect the wind farm to the onshore transmission system.

High demand for HVDC cables and components, and consequent congestion in order queues, means that developers must order critical transmission components between 6.5 and 8 years before project completion. Such key component uncertainty can place enormous uncertainty and risk on project timelines, reducing finance certainty, and ultimately threatening project viability. This is symptomatic of a need to expand manufacturing capacity in key areas across the technology and value chains. In this situation, the UK's insufficient domestic supply chain capacity compromises efforts to construct new generation capacity.

The government should take steps to ensure that supply chain constraints and congestion in queues for critical transmission components are not barriers to delivering on its targets for clean power. One option worth considering would be expanding the Advanced Procurement Mechanism to developers, enabling them to book supply chain capacity in advance of certainty regarding project revenue and, where projects cannot continue, providing mechanisms for commissioned supply chain capacity (and associated cost) to be passed on to other projects and developers.

***To what extent would growing the domestic supply chain bolster UK energy security?***

International supply chains will remain important to the UK's energy transition and the country's overall energy security. In some cases, international supply chains will be essential to ensuring the country's energy security. The lead times required to establish new supply chains for the energy industry and to grow existing ones can be lengthy, so any new policy interventions aimed at growing the UK's domestic energy industry supply chain would need to be taken forward today.

Multilateral co-operation on energy industry supply chains will be key, as will co-operation on the balancing of energy grids via interconnectors. As such, conceptions of national energy security should be broadened to encapsulate international supply chains and international generation capacity. For instance, the NeuConnect Interconnector cable currently under development will be the first direct power link between Germany and Great Britain and will facilitate up to 1.4GW of electricity to move in either direction. This interconnector is expected to be operational in 2028 and is an example of how international co-operation benefits UK energy security.

Finally, although growing the energy industry's domestic supply chain could have a positive impact on UK energy security, it is clear that expanding domestic generation capacity will have a significant improvement on energy security. Doing so will reduce the country's reliance on volatile fossil fuel markets at the same time as delivering jobs and investment. The current government has demonstrated that there are policy solutions which increase generation capacity while growing domestic supply chains – for instance, the Clean Industry Bonus (CIB) Allocation Framework, an initiative introduced to encourage developers to make investments in improving tangible assets (e.g. ports or manufacturing facilities), is a good example of a mechanism which incentivises UK content and inward investment as part of the development of new clean power projects. Via CIB, offshore wind developers making bids via the CfD scheme can obtain extra revenue support if they invest in improving energy industry supply chains via the development of new infrastructure or the improvement of existing infrastructure. EnBW has welcomed the CIB and recognises its value.

***What are the key concerns with respect to the availability of raw materials in the supply chain and how might those be addressed?***

No response.

*February 2025*