

Written evidence submitted by Suffolk County Council and East Suffolk Council

with the New Anglia Local Economic Partnership, Norfolk County Council, North Norfolk District Council and Great Yarmouth Borough Council

Suffolk County Council and East Suffolk Council have considerable experience in dealing with offshore wind farm (OWF) projects. The shallow seas off the Suffolk coast are considered ideal by the Crown Estate and wind farm developers for fixed foundation offshore wind. The continued development of offshore wind will be a key element of the post Covid-19 economic recovery. This is not without its challenges for Suffolk and East Anglia however, with its suite of offshore and onshore environmental designations and sensitivities, a largely rural hinterland of small communities and an electricity transmission network primarily designed for distribution to consumers, rather than to support significant generating capacity.

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?

The scale, extent and magnitude of projects is larger than ever before

The much larger OWF projects being rolled out in Round 3 has led to the development of very large-scale infrastructure within and adjacent to rural communities. The new sources of generation offshore mean that distribution of generation and network connection infrastructure in the UK have a new geography. Development on this scale is often unprecedented in these areas, so the magnitude of change and consequent harm for communities is very significant.

Community benefits: current and past practice is not necessarily a guide to the future

The established practices of the past, in terms of community benefits, are not sufficient to deal with the impact of these larger projects on these communities, particularly as they are entirely discretionary. Current best practice is explored in detail in [Community benefits from onshore renewable energy developments](#) by the Scottish Government (May 2019). Given the scale and extent of infrastructure required to meet Net Zero by 2050 minimum mandatory tariffs for community benefits should now be considered rather than relying on the best practice guidance approach of the past.

Innovative approaches to community benefits should be applied to offshore wind

The onshore wind and solar sectors have generally been more effective at both community engagement and the use of community benefits to achieve fair outcomes for communities. Onshore solar has embraced the community share approach through for example, [Community Owned Solar LLP](#) and this framework could be applied to larger (NSIP scale) solar projects that are now being developed, as well as to other renewables, including offshore wind. Benefits could include funding for improved local electricity networks or reduced energy bills for affected communities, thereby targeting those rural communities experiencing significant development.

The imbalance of power between developers and communities needs to be recognised and redressed

The industry can exploit the imbalance of power and knowledge between communities and developers to their advantage. Most communities do not have the knowledge, confidence or resources to engage effectively to secure community benefits and compensation, at an early stage in the process. These issues are explored in detail in the 2017 paper [Understanding community benefit payments from renewable energy development](#). Therefore, a future approach to Community Benefits should provide a framework that supports and gives confidence to communities to engage effectively in negotiation with developers at an early stage.

The uneven distribution of economic and social benefits should be reduced

The adverse impacts of the onshore elements of offshore wind development are compounded by the fact that connection infrastructure is not usually co-located with operation and maintenance sites, so the project impacts are not offset by any local economic and skills benefits. This unusual situation

also needs to be considered in the design of processes for community benefit schemes to mitigate for the geographical separation of benefit and harm.

Environmental impacts should be addressed strategically onshore, as they are offshore

In our experience, both the industry and its landlord the Crown Estate have, to date, been reluctant to adequately address the cumulative impacts on communities and the onshore environment resulting from the pipeline of projects needed to deliver Net Zero by 2050. In contrast, they have taken a strategic approach to offshore ecological impacts, through the [plan level HRA process](#) and the [Offshore Energy Strategic Environmental Assessment](#).

There is an opportunity to use the approach that has been applied offshore to better address onshore ecological, landscape and environmental issues. This could be applied to an offshore development round at an earlier stage, in parallel with the identification of seabed bidding areas, rather than solely at the individual project consenting stage.

A mechanism for co-ordination between Local Planning Authorities, the Crown Estate, and onshore statutory consultees would be required. This could be similar to the [Expert Working Group](#) model used to build the evidence base for the plan level HRA offshore. In addition, the scope of the Offshore Wind Strategic Environmental Assessment could be expanded to cover terrestrial issues in the areas likely to host connection infrastructure for each seabed allocation area.

This strategic approach to assessing the onshore impacts of potential offshore wind developments would inform individual project design at an early stage as it does offshore. It would also ameliorate the current problem that at the project consenting stage, the scope of what can be considered in terms of cumulative impacts is constrained by Planning Inspectorate [Advice Note 17](#).

The connection offer process should be reformed to be more responsive to environmental risks and their associated costs at an early stage

The connection offer process is not robust in its preliminary evaluation of environmental effects and their potential impact on both project cost and consenting risk. The [Connection Infrastructure Option Note](#) (CION) process followed by National Grid Electricity System Operator (NGESO) does not deal with environmental risk effectively, as the environmental information is provided by the developer without any examination of its scope or veracity by any other party. This is a consequence of a closed design of the process intended to protect commercial sensitivities.

This is not satisfactory or robust. We recognise the need for confidentiality, but consider it is still possible to design a process that would allow key statutory advisers/regulators, such as Natural England and the Environment Agency, to scrutinise the quality and scope of the environmental information and bring any issues or additional matters they believe should be considered by NGESO and the developer.

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

The current regulatory framework stifles innovation to deliver Net Zero and limits options for reducing the environmental and social impact of offshore wind and connection infrastructure

The current policy and regulatory arrangements are almost entirely focussed on minimising the cost to the consumer of individual projects. This approach actively militates against the efficient use of both land and seabed to connect offshore wind to the National Grid. A more spatially efficient approach could use, [hybrid connection](#) schemes, meshed grids and anticipatory, rather than reactive, development of new connections. These issues have been explored most recently in a report from [Scottish and Southern Energy](#). However, the creation of a meshed grids and hybrid connections of OWF in and across the southern north sea faces significant hurdles which are addressed in the report, [Regulatory and financing principles for a meshed HVDC offshore grid](#)

Previously, National Grid and others have deemed there to be insufficient volume of OWF development to support the coordinated connection of offshore wind. A [study in 2015](#) concluded that, *“By pursuing a non-integrated design both National Grid and the offshore generation developers can maintain closer control over the scope and programme of their individual works and hence minimise risks for consumers and investors alike”*

The regulatory changes required to deliver integrated networks are discussed in detail in a paper from the Offshore Wind Industry Council in November 2019 [Enabling efficient development of transmission networks for offshore wind targets](#). The current approach results in multiple radial connections and substations, an outcome identified as unlikely, “to be economical sensible or acceptable for consumers or communities” in the [Ofgem Decarbonisation Action Plan 2020](#) p19.

Whilst meshed grids and hybrid interconnector offshore wind projects will create a more rational and less widespread connection infrastructure, coordinated and integrated connections are a panacea. They will still require large onshore infrastructure in key locations, such as the [Viking Link Converter station at Biker Fen](#). Reinforcement and expansion of the onshore 400Kv transmission network will also still be necessary. The impacts on communities and the environment where this takes place will continue to be significant.

Multiple radial connections waste the limited options for onshore connection points

Multiple radial connections place significant pressure on the very limited number of locations suitable for cables to make landfall on the particularly sensitive, eroding coastline of East Anglia. The [proposed landfall for Norfolk Vanguard](#) is illustrative of this challenge. The long-term stability of landfall locations is recognised as key to securing energy supplies, as illustrated by the use of a “sand engine” at the [Bacton Gas Terminal in North Norfolk](#) to manage the rate of coastal change.

Offshore wind and climate change adaptation in host communities

Offshore wind is now a maturing industry which is attracting oil majors in addition to the existing participants. The income streams from offshore wind projects for both the private sector and the Government, via the Crown Estate, are substantial. These opportunities are set by the Department for International Trade in [Offshore Wind Opportunities for Trade and Investment](#). At the same time, many of the coastal areas that support the development of offshore wind face the significant challenge of adapting to the impact of climate change. Rising sea levels, eroding coastlines, inundation and saline intrusion are already having impacts on coastal communities, businesses, agricultural sustainability and protected habitats.

Part of the revenues for offshore renewables, including those of the Crown Estate, should be used to support strategic adaptation to climate change.

Measures, such as those used at Bacton, would help safeguard the land and communities that support the offshore energy industry and host its connection sites, as well as protect the infrastructure itself.

[Both traditional defences or more adaptive measures, such as those at Happisburgh in Norfolk are very costly](#). The current emerging, unpublished, estimate from [Coastal Partnership East](#) for the work required in Norfolk and Suffolk for 2019 - 2029 is a capital programme of £150 million. Funding streams from offshore renewables could contribute to this expenditure and safeguard the [ports, landfalls and coastal transmission infrastructure](#) that is required to support offshore generation and the Net Zero ambition.

At present there are no specific national funding mechanisms to assist coastal settlements to adapt to climate change but there are [now case studies](#), where funding has been available, illustrating how communities can successfully adapt.

There is a need for a new fund for coastal local authorities to administer, to fund traditional and adaptive coastal risk management measures. The fund could:

- Partially redress the impacts to local communities from wind farm infrastructure,
- Allow Local Authorities to augment existing coastal protection schemes or fund new initiatives.
- To deliver community adaptation to sea level rise, ecosystem services and net zero outcomes for the health and well-being of our communities and habitats and boost our economy locally.
- Contributions from offshore developments and the Crown Estate leasing revenue could then be integrated with Defra expenditure on coastal management.

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?

The Sector deal sets the broad strategic framework for UK supply chain development, but the underpinning systems are not sufficiently robust to properly support productivity and competitiveness. The Sector Deal lacked a fundamental step change as the measures within it had, largely, already been announced elsewhere to enable the target of 30GW, now increased to 40GW.

Money in the Offshore Wind Growth Programme (OWGP) should be spent over a shorter period, to ensure the UK can effectively compete internationally.

Whilst it has been possible to meet the UK content targets, the key challenge is to increase the quality and value of UK owned intellectual property. As outlined in the [Whitmarsh Review](#). Due to the pace of technological change within the industry more rapid spend of [OWGP](#) money is needed to capture the opportunity of securing valuable UK intellectual property, that could otherwise be lost to overseas state backed innovators within a few years.

National Data from the development and implementation of Supply Chain Plans is not shared locally in an effective or timely way to support supply chain development. Monitoring and enforcement of Supply Chain Plans by BEIS is not sufficiently transparent or reactive to economic conditions.

Local Authorities (LA) alongside their Local Enterprise Partnership (LEP) partners are [strategic drivers for local economic growth](#) and boosting productivity. A mechanism is required that includes these senior local stakeholders in both data collection for reporting purposes and sharing of the achieved outcomes. This will be of benefit to all, ensuring robustness in data collection whilst also providing useful information that will assist the LA's and LEP's when they strategically plan sustainable growth for their local region.

The developer and Tier 1 suppliers must be held properly accountable for delivery of supply chain plans, to ensure that both local and national economic and social benefits are delivered.

It currently takes around 10 years to plan and deliver an offshore wind farm project, a Supply Chain Plan is submitted on application to the CfD process and then enacted on for the remainder of the project. [An example for East Anglia One can be found here](#). This timeframe is likely to cover at least one full economic cycle, so the process needs to be sufficiently flexible and transparent to take into account the changing economic conditions and react to local and national strategic drivers.

The sector deal does not provide a clear framework for Local Economic Partnerships and Local Authorities to ensure Tier 2 suppliers can benefit from developer and tier 1 procurement

Systems to support lower level suppliers are essential if they are to navigate the procurement processes of developers and their Tier 1 suppliers' selection process, for both manufacture, operation and maintenance (O&M). In the context of East Anglia barriers to SMEs in O&M and local associated support services are a significant issue. Barriers to SME entry to the supply chain are explored in detail in, [The UK Offshore Wind Industry: Supply Chain Review](#).

Grid related constraints are still a major barrier to delivering the offshore wind targets for 2030 and beyond.

Fundamental change to the offshore transmission regime is needed to avoid congestion in both offshore cable routes and onshore grid connections that are concentrated in certain geographical areas increasing community and environmental impact. These issues are well documented in publications such as [Offshore Wind Sector Deal: Enabling efficient development of transmission networks for offshore wind targets](#). Not only will a solution to this require innovation in design of the transmission regime but also [innovation in technology](#) as we move away from radial offshore connections.

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

Principally this is a question for the industry, however we consider that there are structural issues to be addressed to support Offshore Wind, so it can fully contribute to a post the pandemic economic recovery.

Systematic support for the development of port infrastructure and related transport infrastructure, to ensure these key assets can support the development of Offshore Wind.

This approach would also ensure that some of the most marginal and left behind coastal communities in the UK, and the [East of England](#), are properly able to benefit from the economic and social benefits of offshore wind.

The systematic support of STEM education and skills, to create a broader and deeper pool of skilled labour and potential trainees.

The development of STEM education through the roll out of Net Zero generation and connection projects and the climate adaptation challenge more broadly, should be a driver for a co-ordinated approach to STEM. The current incremental and ad hoc project by project approach has only been partially addressed by the work in this area of the [Offshore Renewable Energy Catapult](#).

The 2016 [report from the Royal Academy of Engineering](#) sets out the need for co-ordination of STEM education generally. An overarching national approach to both renewable STEM education and renewables skills could provide the framework for regional and local work in these areas. In this way the work of individual developers and projects could contribute to overall goals, delivering a pipeline of appropriately educated, well informed and trained staff to the sector.