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BY EMAIL

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Your Ref:
Our Ref:
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Dear Alice,

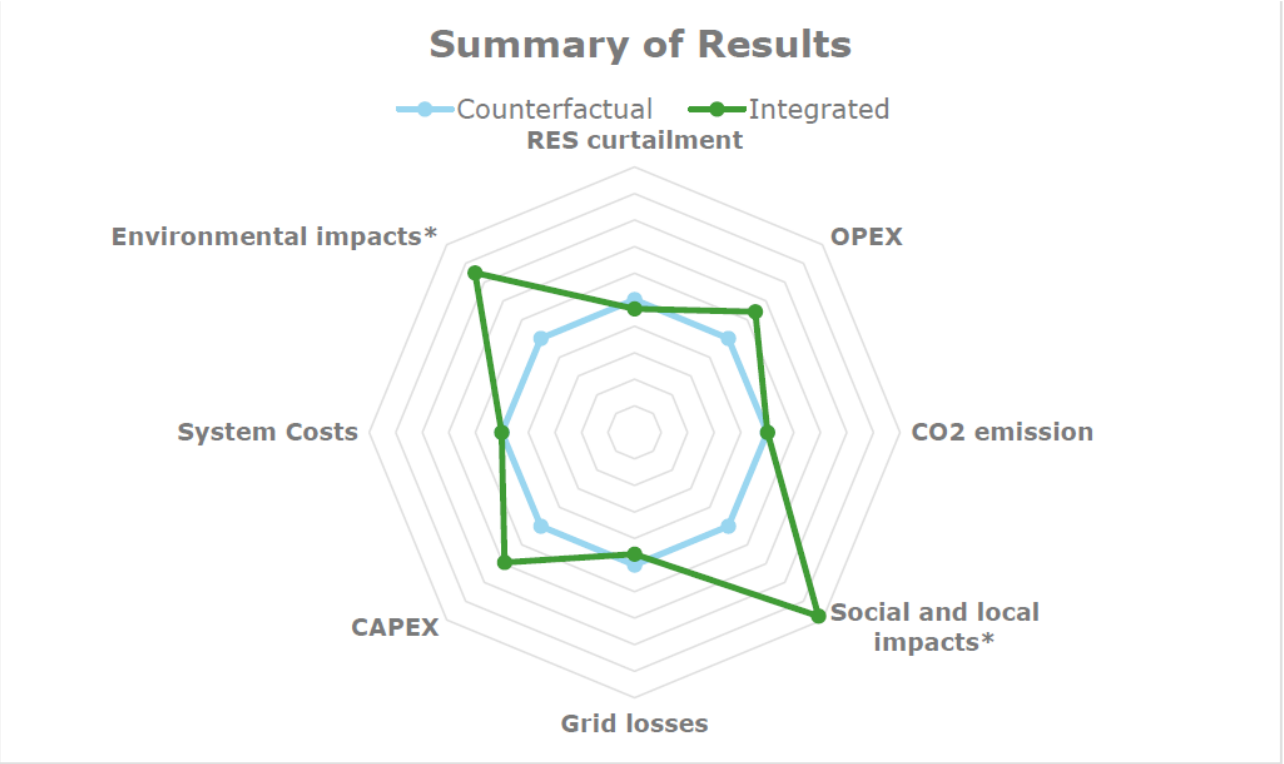
Offshore Coordination Project Consultation
30th September - 28th October 2020

Summary of this response

- The consultation identifies clear benefits from the coordination of offshore connections, for both communities and the environment and for capital and operating costs
- Substantive pathfinder projects before 2030, enabled by a dynamic, adaptive, and flexible approach to regulation from Ofgem and BEIS, will be essential to realise the most substantial benefits of coordination.
- Substantive pathfinder projects before 2030 will support energy sector confidence and the adaptation of supply chains, whilst minimising the impacts of new infrastructure on communities and the environment.
- Notwithstanding the benefits of coordinated offshore networks, a new settlement for communities, to ensure that they are adequately compensated for residual impacts, that cannot be mitigated is essential.
- The consequences of coordinated offshore connections, for the future reinforcement and modification of the onshore grid, is of significant concern. Although we recognise that this is outside the scope of the OTNR

Suffolk County Council and East Suffolk Council welcome this consultation and its findings. The Councils are also very grateful to National Grid Electricity System Operator (NGESO) for its sustained and effective engagement with their officers, during the development of this project and during the consultation.

This first phase of the Offshore Coordination Project has set out a new approach to offshore transmission. Even at this early stage, there are clearly benefits not just for the environment and local communities, but also for capital and operating costs as summarised in figure 2-4 of the cost-benefit analysis reproduced below.



However, this phase has identified that there are significant technological and regulatory challenges to be overcome if the benefits of this approach are to be secured. Furthermore, early and decisive action will yield a much greater reduction in the scale of infrastructure required through coordination, in both the short and long term.

We consider that substantive pathfinder projects before 2030, enabled by a dynamic, adaptive, and flexible approach to regulation from Ofgem and BEIS, will be essential. These will maximise the level of coordination, support energy sector confidence and the adaptation of supply chains, whilst minimising the impacts of new infrastructure on communities and the environment.

A new definition of coordinated and efficient transmission

The work set out in this consultation finds that significant cost savings (18% lower total lifetime cost) and a significant reduction in land take and seabed use, can be achieved through the coordination of offshore connections. As such, the findings of this report change the definition of what is, under the terms of the Electricity Act 1989, s9(2) "*a coordinated, efficient and economic system of transmission*".

Previously, this had been defined by the fact that National Grid and others had deemed, in the Integrated *Offshore Transmission Project (East) Final Report Conclusions and Recommendations August 2015*, and other studies, that there was insufficient volume of Offshore Wind Farm (OWF) development, to support the coordinated connection of offshore wind. Further, they considered 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".*

Early deployment secures greater benefits

As a result of these previous findings, the regulatory regime and connections process has been designed and operated to deliver lowest cost single radial connections. Therefore, this formal change of position, principally in light of the much greater volume of OWF generation now expected, in order to deliver Net Zero by 2050, will have significant and widespread impacts on the current regulatory and commercial frameworks.

In terms of regulatory and commercial frameworks, it is notable that this consultation report makes a clear distinction between what could be achieved, and what it is considered likely to be achievable. By way of example, the report Holistic Approach to Offshore Transmission Planning says:

> *The number of landing points required for the integrated solution is estimated to be 30 by 2050, whilst for the status quo it is 105. The number of network assets in the integrated option would be 60% lower by 2030, 70% lower by 2050. These figures relate to onshore substations, export cables and offshore platforms.*

Whilst the benefits are clear, both Council's consider that it is unfortunate that the same report goes on to say that, "*we feel this level of reduction is at the upper end of estimates as it is based on the assumption that full integration takes place before 2030. However, this may not be achievable, with changes more likely to happen in a phased way up to this date. We consider a 50% reduction may be a more realistic estimate*".

The report clearly identifies that the rapid and early deployment of integrated solutions would secure greater benefits in the long-term. Therefore, it is essential that every effort be made to make full integration by 2030 achievable.

Securing the benefits of the proposed changes

The report is also clear that there are significant technological challenges, particularly in relation to cabling and High Voltage Direct Current Circuit Breakers. It is notable that the *Progress on Meshed HVDC Offshore Transmission Networks* project[1] is looking at these issues in detail, and testing various solutions, building on the deployment of HVDC circuit breakers in China.

The Councils consider that in order for these technological hurdles to be overcome, an early pathfinder project or projects will be needed, such an approach would seem to be consistent with the objectives and purpose of the Offshore Renewables Catapult.

Pathfinder projects would also be likely to require short-term regulatory flexibility. Ofgem's sandbox framework appears to be suitable. This approach to flexible regulation, trials new approaches to regulation and deployment of new systems. The description of the sandbox approach set out by Ofgem[2] includes:

- *Bespoke guidance on interpreting regulations and how they might apply to an innovator's specific trial circumstances.*
- *Comfort about our approach to compliance and enforcement for the purposes of a trial.*
- *Confirmation that a proposition is permissible.*
- *Formal relief (a derogation) from a specific rule (from a licence or code) that an innovator is not able to comply with.*

This appears to offer the model of a way forward to enable the more rapid deployment and testing of new technologies, and to build developer confidence in respect of potential regulatory and investment uncertainty. Learning from this process would also inform the development of a new enduring regime.

[1] https://www.promotion-offshore.net/fileadmin/PDFs/D12.4_-_Final_Deployment_Plan.pdf

[2] https://www.ofgem.gov.uk/about-us/how-we-engage/innovation-link

A Crown Estate's press release regarding Round 4 on the 15th of October[3] states that, *"once consented through the statutory planning process, Round 4 projects could begin generating clean power by the end of the decade"*. Given that these projects are at the very earliest stage of development, a regulatory sandbox for the delivery of Round 4 in this region, would be an effective pathfinder for the implementation of the enduring regulatory regime after 2030.

In addition, current emerging projects (particularly interconnectors and extension round projects) appear likely to be capable of adaptation to an integrated approach, given a reasonable degree of regulatory flexibility.

It is also the view of the Councils that appropriate regulatory flexibility could create an opportunity to consolidate infrastructure for the most mature projects post consent, at the detailed design and procurement stage, (particularly where they are being delivered by the same promoter or promoter group), without significant project delays.

The Councils consider that this variation in approach, based on project maturity, would be likely to facilitate and maximise appropriate opportunities for the coordination and integration of projects at all stages of development, connecting before 2030, and so enable the high levels of potential integration identified in the consultation report. Indeed, this is the conclusion of a paper commissioned for the Offshore Wind Industry Council and published in June 2020[4] which found that *"The later integrated solutions are developed, the lower the opportunity to realise the full benefits of these approaches".*

The benefits of pathfinder projects also extend to economic and supply chain adaptation, a benefit that has export potential. A clear regulatory signal would support the development of the necessary innovation, for both modified supply chains, and of the financing and commercial structures needed to deliver offshore meshed grids. This would be a significant benefit to the UK's competitive position for the delivery of offshore HVDC grids in the UK, and overseas, as well as accelerating the development of local supply chains and the necessary supporting skills.

Changes to the connection offer process

Where changes to process are in the gift of the National Grid System Operator, a program of the short, medium, and long-term changes, that would support the coordination of connections has been set out. The Councils will be pleased to continue to work with NGESO on the details of these changes in the second stage of this review.

In terms of the assessment of environmental impacts as part of the CION, the bundling of connections, and focus on fewer larger sites, means that an effective plan level assessment of the environmental effects of connection offers, both offshore *and* onshore, is likely to be essential.

The benefits for communities and the environment

The consultation has identified that a significant reduction in infrastructure will be likely to reduce overall harm to public amenity and the natural environment, but it is also clear that a coordinated approach will lead to the creation of fewer, larger, onshore connection locations.

This finding underlines the need to develop a new settlement for communities to ensure that they are adequately compensated for residual impacts, that cannot be mitigated. This new settlement and approach is essential to develop a much greater degree of local benefit, for what is a major and far reaching transformation of the energy system.

[3] https://www.thecrownestate.co.uk/en-gb/media-and-insights/news/the-crown-estate-updates-timings-for-final-tender-stage-of-offshore-wind-leasing-round-4/

[4] *De-risking Integrated Offshore Networks in GB* https://www.hvdccentre.com/wp-content/uploads/2020/06/De-risking-Integrated-Offshore-Networks_v2.0_25June2020.pdf

The spatial scale of cost-benefit analysis is for Great Britain which is logical for capital and operational costs. However, extrapolation of the data at a more localised level would assist with, for example, the comparison with Carbon Intensity.

The analysis of Carbon Intensity should interact with KPIs for land (e.g. sequestering and storing carbon) and capital costs (e.g. embodied carbon). The Councils would expect the results for CO2 intensity should flow more closely the savings to capital costs.

In the development of KPIs, an approach to comparing the costs-benefits for landscape value needs to be developed. The approach would be using natural capital and a lot of progress has been made recently to develop the robust evidence base, but the effectiveness of this approach tends to work on a project-specific level rather than policy development. However, approximations could be incorporated in the process and the Councils would welcome further dialogue so that this element is incorporated.

The next phase of the project

The Councils welcome the findings of the work undertaken so far and recognise its strategic nature and purpose to set out a vision for an integrated offshore network. Of critical importance to the realisation of this vision is much greater clarity and direction as to how this will be achieved. It is appreciated that many of these issues are matters that cannot be tackled by NGESO, and we look to BEIS and Ofgem to articulate and resolve them.

The Councils understand that Phase 2 of this project will consider this in more detail, and we look forward to engaging with the next phase of this work.

Furthermore, during phase 2 we hope that the potential consequences of coordinated offshore connections, on the reinforcement and modification of the onshore grid, will become clearer as this relationship is of significant concern, for both the Councils and Members of Parliament. However, we recognise that this is outside the scope of the OTNR.

Responses to the consultation questions on which the Councils are able to comment, are appended to this letter.

Yours sincerely

Richard Rout
Cabinet Member for Environment & Public Protection

Craig Rivett
Deputy Leader and Cabinet Member for Economic Development
East Suffolk Council

Appendix – consultation questions and responses

Holistic Approach to Offshore Transmission Planning Report

Q1. Do you agree with our assessment of the key technology and system risk barriers coming from the Holistic Approach to Offshore Transmission Planning Report?

Based on our limited understanding of these issues the problems identified seem to be reasonable.

However, we note that the appropriate financial and legal frameworks required, for a meshed offshore grid, also need to be identified and developed, in addition to the technological system operation and system security issues identified in the report.

In addition, a coordinated approach raises further issues that will need to be addressed in phase two of the work, including:

- How to manage the system failure risks of a small number of multi project connection hubs, where failure would potentially have more widespread impacts than the loss of one point to point connection.
- A clearer understanding of the likely size and footprint of onshore multi-terminal hub sites
- A greater clarity around the in-principle approach to onshore connection point site selection, through a clearer understanding of the expected operational network and technological drivers for site selection.
- Greater clarity on the distinction between the location drivers for consolidated cable landing points and the location drivers for connection points to the NGET grid.
- An understanding of the extent to which an offshore network may, or may not, change the siting decisions for individual OWF.

Q2. Do you have any proposals on how to most effectively bring the technology to market for when needed?

As set out in our letter early pathfinder projects, facilitated by flexible regulation, appear likely to be effective in supporting this.

Q3. Do you have any additional evidence to inform the assessment we have made?
No

Q4. Do you have any further feedback on the report?

The *Leading the Way* scenario used in this report forecasts 27.5GW of OWF installed capacity offshore wind power in the Eastern Regions by 2050. This far exceeds the ambition set within the remaining five regions identified, it reflects the importance of the Southern North Sea for fixed foundation offshore wind.

Delivering one or more High Voltage DC multi-terminal sites in such a scenario would be very demanding, in terms of footprint both on and offshore. Finding a suitable site large enough to accommodate an onshore multi-terminal hub, as well as a location to bring new cable infrastructure onshore at this scale, is an unavoidable and significant challenge.

Cost-benefit Analysis Report

Q1. Do you agree with our assessment of the costs and benefits?
No comment

Q2. Do you have any other evidence to support or challenge the assessment made?
No

Q3. What do you see as the potential impact on the environment of these proposals, particularly the reduction in the number of assets and landing points?

Overall, the reduction in landing/ onshore connection points and offshore infrastructure can be expected to provide significant benefits. However, a considerable amount of new infrastructure, both on and offshore, will be required to connect the number of generation assets expected. Therefore, significant though more focused impacts, both on and offshore, can be expected.

These impacts will need to be mitigated and compensated for appropriately, and this will incur costs to projects, that should be recognised in the CBA.

Q4. Do you have any further evidence on the potential social and community impacts of these proposals? We would particularly welcome responses from local authorities on this question.

The focusing of onshore development in key strategic locations, which will likely be shaped by the legacy infrastructure of the onshore grid, will be particularly challenging, notwithstanding significant coordination of offshore connections.

A revised approach to the identification, development and ongoing management and expansion of these sites will be essential. As is an opportunity for communities and environmental stakeholders, in these locations to engage effectively with promoters, as these sites continue to develop out to 2050. Developers, OFTOs and statutory undertakers will *all* need to be prepared to invest considerable time and effort in ongoing engagement with the communities around these sites.

Furthermore, they will all need to contribute effectively to building social permission for the transformation of the energy system.[5] This will need to become a key plank of their Environmental and Social Governance, in their relationships with communities, in a way that is not the case at present. To achieve this, projects will, singly and in combination, need to deliver social value, as set out in a recent report for the Institution of Civil Engineers[6]

Q5. Where do you see value for further work to build on and test these findings? Either from the proposed list or beyond?
No comment

A minor aspect, which that needs to be corrected during the development of the Cost-Benefit Analysis is that East Suffolk Council did respond to the consultation, but this is not set out in the summary of social impacts and Appendix A.

Offshore Connections Review Report

Q1. Do you think that if the areas we are highlighting were improved, that the ability to coordinate projects would be significantly increased?

The proposed modifications of the CION, in both the short and long term, are likely to offer significant benefits for coordination.

[5] p60 - https://www.regen.co.uk/download/local-leadership-to-transform-our-energy-system/
[6] https://usefulprojects.co.uk/project/maximisingsocialvalueofinfrastructure/

However, we still consider that other modifications to the process are required to ensure the natural environment impacts of individual or bundled connection offers, are reasonably assessed at the plan level, as they currently are for offshore development and cable leases.

Given the focus on fewer larger sites, and therefore the consequent environmental impact of a smaller number of large connection points, both on an offshore, the effective plan level assessment of environmental effects, is likely to be essential.

Q2. Do you think we have missed anything in our offshore connections review that would add value and increase coordination?

As set out in our letter changes to the CION process must be supported by wider regulatory change, in both the short and long term, to maximise the extent and benefits of offshore coordination.