28 FEBRUARY 2023

THE INFRASTRUCTURE PLANNING (EXAMINATIONS PROCEDURE) RULES 2010

THE SHERINGHAM SHOAL AND DUDGEON EXTENSIONS OFFSHORE WINDFARM ORDER

WRITTEN REPRESENTATION ON BEHALF OF NATIONAL GRID ELECTRICITY SYSTEM OPERATOR LIMITED

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1 RESPONSE TO FIRST WRITTEN QUESTIONS

1.1 In response to the Examining Authority's publication on 27 January 2023 of the Written Questions and Requests for information (WQ1), certain questions addressed to 'National Grid' have been directed by National Grid Electricity Transmission plc ("NGET") to National Grid Electricity system Operator Limited ("NGESO").

1.2 The following paragraphs explain the need to distinguish between NGESO and NGET.

1.3 NGESO is the operator of the national electricity transmission system in Great Britain. Its role is to coordinate and direct the flow of electricity onto and over the NETS in an economic and coordinated manner. NGESO must maintain system balance minute by minute, and address supply and demand mismatch, generation shortfall and/or high demand and insufficient generation margins to maintain supply. NGESO operates the system but is not responsible for the infrastructure needed to carry the electricity.

1.4 NGET is one of three Transmission Owners in Great Britain, owning the high voltage National Electricity Transmission System ("NETS") in England and Wales. NGET's obligations include building and maintaining the NETS safely, reliably, economically and efficiently and providing transmission services to its System Operator.

1.5 Additionally, NGESO manages the connection application and offer process in Great Britain as required by its transmission licence. It doesn't control in any way who and when a party can apply for connection but on application makes an offer for connection. This offer is based on and reflects the offer that in turn NGESO receives from NGET. In relation to offshore wind farms the process for identifying the connection locations between the onshore and offshore system is described in our response to question Q1.2.2.1a). Under the current generator build model and in advance of the holistic network design approach set out in question Q1.2.3.1 the design of the offshore network is the responsibility of the developer.

1.6 Business separation between NGET as Transmission Owner and NGESO as System Operator occurred in April 2019. NGET and NGESO are legally separate companies operating within the National Grid group as separate businesses.

1.7 NGET have drawn the ExA's First Written questions to NGESO's attention and this is the response on behalf of NGESO.

Appendix 1

NGESO's Responses to the Examining Authority's First Written Questions

Question Number	Question	NGESO Response
Q1.2.2.1	**Grid Connection** The Applicant has reported on the optioneering process that underpinned the selection process for the wind farm locations, the landfall location and the onsite substation location, commenting that the latter emerged following consultation with National Grid [APP-089] [APP-175]. The ExA seeks clarification, in light of policy and legislative requirements set out in NPS EN-1 Section 4.4 and the EIA Regulations 2017, on the following matters:	
	Addressed to National Grid	
	a) Signpost in the Application material or submit information to highlight what alternative grid connections, other than Norwich Main, were offered to the Applicant?	As operator of the national electricity transmission system, NGESO is the party that parties apply to when they want to connect to/use the system. Offers for connection/use have to be made by NGESO as required by its transmission licence. NGESO doesn't control in any way who and when a party can apply. In relation to connection applications for offshore wind farms the Connection and Infrastructure Options Note (CION) process (a licence requirement delivered through STCP 18-1 Issue 009 Connection and Modification Applications) is used to identify a connection location following an application for a connection agreement. This industry approved procedure documents the role and responsibilities of the parties responsible for offshore grid connections, who comprise the Developer (in this case the Applicants), the Transmission Owner (TO) (in this case NGET) and NGESO (in its role as System Operator (SO)). The CION is a collaborative process resulting in a preferred point of connection to the transmission system to inform the connection offer and scope of the transmission works. The CION records the output of the work between the Developer, TO and NGESO to identify the overall most economic, efficient and coordinated connection option. Planning and environmental considerations are inherent in the process as the Developer must accept the

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		connection offer and following the CION process the option identified must be feasible in terms of consenting and deliverability. All parties to the CION are mindful that the necessary consents must be subsequently obtained through the planning process to deliver the identified option. Parties to the CION process are also subject to amenity duties under Schedule 9 of the Electricity Act 1989.
	b) What criteria did you consider in making the connection offer to the Applicant?	As set out above in response to Q1.2.2.1a , the CION process sets out criteria for making connections offers.
	Addressed to National Grid and the Promoter	
	a) Further explanation is needed to support the nuanced steps in the site selection process [APP-175, Plate 3-1]. For instance, did the identification of the offshore cable corridor, landfall, onshore cable corridor and onshore substation take place concurrently as shown [APP-175, Plate 3-1]?	The Applicants accepted the connection offer and are seeking the consents. The site selection process was carried out by the Applicant within the parameters of the connection offer, and the exact connection location, substation location and landfall location are decisions made by the Applicant as a result of their site selection processes. The Applicant is therefore in the best position to explain their site selection process from a planning perspective (both alone and in the context of the applicants' projects as a whole).
	b) Applicant, submit marked on a map all the sites (field 1 to field 5 [APP-175, Table 3-5] and any others) considered for the onshore substation, a comparative assessment of suitability, including the criteria and weighting used for the assessment, with a statement of why each other site was dismissed, and the proposed site selected. In that regard, identify what options 1 to 6 refer to [APP-175, Table 3-1].	NGESO considers this is a question for the Applicant.
	c) Provide a full flow chart with the sequence of steps taken, and the criteria and weighting that underpinned key decisions. In particular, outline how the MCZ, biodiversity and designated natural and built assets were considered.	NGESO considers this is a question for the Applicant.

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	d) What weight or extent of consideration is given to nature, biodiversity and sites designated for nature conservation when preparing the CION and offer options?	The CION process is designed to identify the most economic and efficient point for the connection between the transmission system and the developer's system. This assessment considers certain qualitative factors such as environmental impacts, local disruption, and consenting. The aforementioned are considered, where possible at this early stage of the connection process and in a general way. The environmental, disruption, and consenting information is typically provided by the developer and the relevant Transmission Owner It is worth noting that whilst the discounting of options does not directly state the environmental impact of each option, each connection point must be accepted by the developer who must be confident that environmental impacts wouldn't prohibit development.
	e) Given its distance in-land, what factors made Norwich substation the best option for the grid connection?	Following review of the available options during CION process, the route to the Norwich substation provided the shortest cable route and the best performance against the Cost Benefit Assessment and deliverability.
	f) Submit the CION and any relevant supporting material. If the CION is an extensive document, provide a summary as well.	This is a confidential document between the NGESO, NGET and the Developer.
Q1.2.2.2	**Substation Location** In relation to the proposed substation for the Proposed Development:	
	Addressed to National Grid	
	a) Are there any concerns from a structural, engineering or technical perspective with regards to the specific location for the proposed substation [AS-005]?	NGESO considers this a question for NGET
	b) Are the works you require to upgrade and extend Norwich Main, or to connect and integrate with the Proposed Development adequately, covered within Schedule 1 of	NGESO considers this a question for NGET

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	the dDCO and the associated Works Plans [APP-011, AS-009]?	
Q1.2.2.3	**Walpole Substation**	
	At OFH1 [EV-009] [EV-010], a number of speakers highlighted that there was spare capacity at the Walpole Substation following the mothballing of Sutton Bridge gas fired power station and the declination of an application for Docking Shoal wind farm to connect. Comment on all aspects of this scenario. If this is the case how did this feature in the assessment of alternatives for the substation selection for the Proposed Development?	Following input from various developers over the years, it is the NGESO and NGET's understanding that the seabed routes to Walpole through the Wash are at capacity with no further available space for more cables. Therefore, this option was discounted.
Q1.2.3.1	**Offshore Transmission Network**	
	a) Explain what an OTN would consist of and what the current policy and industry support for such an approach is.	The current electricity transmission network has elements that are classified as onshore transmission network that are primarily located on land and offshore transmission network that connect offshore wind farms to the onshore transmission network, primarily through network that is located in the sea. Historically the offshore transmission network has been built on an individual basis, with each wind farm having its own connection. The connection of these wind farms is therefore via an offshore transmission network in line with the regulatory classifications. The Department for Energy Security and Net Zero (now DESNZ) launched the Offshore Transmission Network Review (OTNR) in 2020 to recognise the increasing role offshore wind will play in meeting the government target for net zero by 2050 and the ambition for 50GW offshore wind by 2030. This has the objective "To ensure that the transmission connections for offshore wind generation are delivered in the most appropriate way, considering the increased ambition for offshore wind to achieve net zero. This will be done with a view to finding the appropriate balance between environmental, social and economic costs." Three workstreams were created in the OTNR to cover offshore wind projects at different stages of development, namely Early Opportunities, Pathway to 2030 and Enduring Regime. Multi-purpose interconnectors are also considered across the three workstreams.

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		The Early Opportunities workstream encourages developers of offshore wind and interconnector projects that are working to achieve planning consent to explore opportunities to coordinate their connections. Projects in scope of the Early Opportunities workstream have confirmed network connection arrangements in place and are more advanced in their development compared to those in the Pathway to 2030 workstream. The Early Opportunities workstream seeks to balance reducing the impact of network infrastructure on communities and the environment with not disrupting the projects' ongoing development, which could increase costs and put the ambition for 50 GW of offshore wind by 2030 at risk. BEIS (now DESNZ) announced four initial pathfinder projects from the Early Opportunity projects, including the Equinor Sheringham Shoal and Dudgeon extension projects. The pathfinder projects are well-advanced projects that are leading the way in utilising the regulatory and policy changes being developed through the OTNR to increase transmission network coordination and deliver the OTNR's objectives. DESNZ also currently has an Offshore Coordination Support Scheme running with the objective of providing grant payments to enable the development of coordinated options for offshore transmission and RenewableUK has been playing a facilitative role in this workstream, through engaging with the relevant developers in the East Anglia Region and seeking options to take coordination opportunities forward and identify additional pathfinder projects. In contrast to the Early Opportunities workstream, the Pathway to 2030 workstream includes offshore wind projects that are at a fairly early stage of development, primarily those that received seabed leases in the Crown Estate seabed leasing round 4 and the ScotWind leasing round. As part of the Pathway to 2030, NGESO delivered the first Holistic Network Design (HND) in July 2022 and are currently developing the second HND. The HND is an innovative, centralised, strategic network design that integrates connecting offshore wind with the network

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		capacity to transport the electricity it produces to where it will be used in GB. It also balances the objectives of cost to consumers, deliverability and operability, and minimising the impact on the environment and communities. The enduring approach to designing an integrated offshore network will be established through the Enduring Regime workstream of the OTNR in alignment with Ofgem's Electricity Transmission Network Planning Review. More information on DESNZ, Ofgem and our work on these workstreams can be found on the respective organisations' websites.
	b) Has an OTN has been considered for the Proposed Development? Is an OTN, as described by IPs during representations at OFH1 [EV-009] [EV-010] feasible?	As the answer above, the Equinor Sheringham Shoal and Dudgeon extension projects are included within the Early Opportunities workstream and have been confirmed as pathfinder projects by DESNZ, with proposals for coordination of the network infrastructure progressed by the developers. Due to the developer-led nature of early opportunities, a centralised design for an offshore network has not been developed.
	c) In light of policy support (if any) discuss how, in your opinion, this can be considered in this Examination.	As set out in the answers above, as Early Opportunities projects the Equinor Sheringham Shoal and Dudgeon extension projects are not within the direct scope of consideration under the HND but through the pathfinder status have to consider a coordinated approach to the design of the offshore transmission infrastructure