Hornsea Project Four

Written Summary of the Applicant's Oral Case at Issue Specific Hearing 8

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1 Introduction

1.1.1.1 Issue Specific Hearing 8 (ISH8) on onshore environmental matters for the Hornsea Project Four Offshore Wind Farm took place on 19 July 2022 at 09:30 and was held virtually, with attendees attending via Microsoft Teams.

1.1.1.2 The ISH8 broadly followed the agenda published by the Examining Authority (the ExA) on 11 July 2022 (The Agenda). The ExA, the Applicant, and the stakeholders discussed the Agenda items which broadly covered the areas outlined below:

- Proposed development, site selection and design;
- landscape and visual effects;
- Onshore water environment;
- Socio-economic and land use effects; and
- Approach to within project cumulative effects.

Table 1: Summary of the Issue Specific Hearing 8.

Item	ExA Question/Context for discussion	Applicant's Response
Agenda Item 1 - Welcome, introductions, arrangements for the hearing		
1	The Examining Authority ("**ExA**") opened the hearing, introduced themselves and invited those parties present to introduce themselves. The ExA representatives introduced themselves as follows: - Jo Dowling (ExA Inspector Lead) - Andrew Mahon (ExA Inspector) - Stephen Bradley (ExA Inspector) - Rod Macarthur (ExA Inspector) - Gavin Jones (ExA Inspector)	Applicant The representatives for the Applicant introduced themselves as follows: - Claire Brodrick (Senior Associate at Pinsent Masons LLP) - Thomas Watts (Environment and Consent Specialist at Orsted) - Bridgit Hartland-Johnson (Offshore Wind Project Development at Orsted) - Claire Smith (Onshore EIA Manager, Royal HaskoningDHV) - Andrew Ross (Technical Director, Royal HaskoningDHV) East Riding of Yorkshire Council ("**ERYC**") - Matthew Sunman (Principal Planning Officer at ERYC) Mr. Paul Dransfield and Mrs. Joanne Dransfield ("**Mr and Mrs Dransfield**") - Richard Cressall (Partner at Gordons LLP) - Elizabeth Watson (Trainee Solicitor at Gordons LLP)
Agenda Item 2 – Proposed development, site selection and design		
2.1	The ExA noted that it had read all the submissions made at Deadline 5 and Deadline 5a in relation to the access road for the onshore substation, including the consideration of alternatives. The ExA confirmed that it is therefore aware of all the written arguments and counter arguments in relation to the onshore substation access road, although questioned whether any interested parties had anything further to add.	Mrs Brodrick, on behalf of the Applicant, confirmed that the Applicant had nothing further to add. Mrs. Brodrick signposted the ExA to the summary of consultation with Mr and Mrs Dransfield (Appendix A, REP5-074) which collates all the responses provided to Mr and Mrs Dransfield for the purposes of this ISH8. The Applicant notes that neither Mr Cressall, on behalf of Mr and Mrs Dransfield, nor Mr Sunman, on behalf of ERYC, had anything further to add.
2.1	The ExA noted that the Applicant had recently sourced updated traffic flow and collision data for the A164 and A1079 (page 78 of REP5-074). The ExA queried whether the updated data had been submitted into the Examination.	Mrs Brodrick confirmed that no updated data had been submitted into the examination yet but the Applicant can submit this data if that would be useful for the ExA. The ExA asked the Applicant to provide this updated data or at least a summary of the updated data. The Applicant has provided this data at Deadline 6 at **G6.16: Onshore Substation Access Traffic Data Review**.

Item	ExA Question/Context for discussion	Applicant's Response
2.1	The ExA referred to discussions held at the preliminary stage between the Applicant and a Stakeholder Working Group, which contained representatives from a number of parish councils. The ExA noted that although two agendas and a template feedback form for the meetings that were held to host these discussions are available (APP-162), there is a lack of specific relevant representations from the Stakeholder Working Group that the preferred option for the access route is Option 4 via the A1079. The ExA asked the Applicant whether this is something which has been submitted into Examination to support the Applicant's assertion that this option is parish council's preferred route.	Mrs Brodrick confirmed that the minutes of the meetings were annexed to the Consultation Report (APP-129). Mrs Brodrick added that the Applicant would review the minutes and provide signposting to the ExA relating to consideration by the Stakeholder Working Group of the options for access to the onsite substation and Option 4 via the A1079.
2.1	The ExA asked ERYC for an update on the construction timetable of the A164 Jocks Lodge highway improvement scheme (the "**Jock's Lodge Scheme**") as set out at paragraph 7.12.4.3 of the Traffic and Transport Chapter of the Environmental Statement (APP-031), given that the ERYC have said that Condition 22 attached to planning permission reference 20/01073/STPLF shall be completed in June 2023 (REP5-094).	The Applicant notes that Mr Sunman, on behalf of ERYC, stated that due to the Covid-19 pandemic and increasing costs the Jock's Lodge Scheme is no longer programmed to commence in 2022 and/or to complete in 2026. Mr Sunman clarified that it is likely that the works will start towards the end of 2023, with completion then likely to occur in 2027.
2.1	The ExA noted that the access road to Jillywood Farm as part of the Jock's Lodge Scheme would be taken from the A1079 layby. The ExA asked the ERYC whether the precise access road to Jillywood Farm had been determined for Hornsea Project Four Offshore Wind Farm project ("**Hornsea Four**").	In response to comments from Mr Sunman and Mr Cressall on the A1079 layby and interaction between Hornsea Four and the new access to Jillywood Farm, Mr Ross (on behalf of the Applicant) referred to section 4.8 of the Outline Construction Traffic Management Plan at Appendix F of the Outline Code of Construction Practice (REP4-019) which is specifically dedicated to the cumulative effects of and interaction with Hornsea Four and other highway improvement schemes. The Jock's Lodge Scheme is identified as one of these other highway improvement schemes and measures are set out for communication between the Jock's Lodge Scheme and Hornsea Four to avoid and mitigate overlapping road works. The ExA asked for clarification on whether the Applicant was certain that both the Jock's Lodge Scheme and Hornsea Four could be constructed at the same time. Mr Ross

Item	ExA Question/Context for discussion	Applicant's Response
		confirmed that he was absolutely confident that the works could be safely undertaken simultaneously. Mr Ross explained that the distances have been set sufficiently to the East for the Hornsea Four access from the proposed location of the Jillywood Farm access to remove any conflicts and to ensure both access routes did not interact and can co-exist. The ExA then requested information on how both sets of works would work in practice in terms of security, for example whether there would be a gate to the first part of access to Jillywood Farm. Mr Ross stated that any gate would be located at least an HGV length from the access point. Mr Watts, on behalf of the Applicant, said that previous correspondence with ERYC indicates that the redline boundary for the Jock's Lodge Scheme will have a different point of access from Hornsea Four so there is no need for a combined security gate. Mr Watts explained that security measures will differ during construction and operation but confirmed that there will be a security gate for the Hornsea Four access. Mr Watts reiterated that the security measures for Hornsea Four will not interrupt or impede any access to Jillywood Farm as there will be separate accesses. ***Post hearing clarification:*** The Applicant refers to Requirements 11 and 12 of Part 2 of Schedule 1 of the draft DCO (REP5a-002) which provides for the details of any security gate (as a form of enclosure) and access safety measures to be submitted to ERYC for approval.
2.1	The ExA asked the Applicant to confirm whether there would be separation distance between the onshore substation access road and the local wildlife site boundary as shown on sheet 26 of the onshore statutory and non-statutory nature conservation sites document (APP-218).	Mrs Smith, on behalf of the Applicant, confirmed that Jillywood Lane is a local wildlife site, which is shown on the relevant plan as being immediately adjacent and adjoined to the proposed onshore substation access track. Mrs Smith added that this local wildlife site is designated for an intact ancient species rich hedgerow, as well as having a historic designation as a medieval track and boundary Mrs Smith confirmed that there is a gap between the access road and the wildlife site and that consultation has been undertaken with Natural England and Yorkshire Wildlife Trust to ensure that protective measures around the construction of the onshore substation access track are incorporated to protect the integrity of the local wildlife site. The Applicant confirmed that it would provide the exact distance from Jillywood Lane to the access track at Deadline 6.
2.2	The ExA asked the Applicant to provide a brief overview of the design process taken so far in relation to Energy	Mrs Brodrick referred to Issue Specific Hearing 2 where Mr Watts had explained the design vision process (APP-048) and the Outline Design Plan (REP4-021). The written summary of

Item	ExA Question/Context for discussion	Applicant's Response
	Balancing Infrastructure ("**EBI**") elements of the proposed development.	those submissions can be found at REP4-036. Ms Hartland-Johnson, on behalf of the Applicant, supplemented Mr Watt's earlier comments by adding that the design of the EBI (in terms of dimensions) is based on the technology available today that can deliver services to stabilise the grid or interact with the electricity market to improve the operation of a wind farm. However, Ms Hartland-Johnson noted that the technology and conditions of the grid are rapidly changing so it is difficult to identify exactly what apparatus will be in the detailed design at this stage in the process. Ms Hartland-Johnson added that the EBI is likely to include both energy storage and grid stabilising apparatus, with the largest dimension specified in the maximum parameters being related synchronous compensation (which is a large rotating machine that is used to carry out grid stability activities very rapidly). Ms Hartland-Johnson explained that since 2016, energy storage has shifted from being stalled in shipping container type housing to now being stored in prefabricated modular buildings. Ms Hartland-Johnson added that as technology changes different building spaces are required. For example, noise has to be considered and therefore an external building may be required. Ms Hartland-Johnson reiterated that the Applicant has sought to install the best technology available at the time to enable the Applicant to better interact with the grid and the electricity market to improve the overall performance of the wind farm. The ExA sought clarity on whether EBI and its interaction with a wind farm is relatively novel. Ms Hartland-Johnson agreed and confirmed that it is rapidly becoming more of a need. Whilst EBI used to be installed anywhere in the UK, the system is changing to be designed to reflect the locational needs of such technologies, especially as more new variable technologies (such as renewable energy) connect to the grid. Ms Hartland-Johnson explained that locating the EBI as close as possible to the windfarm and its substation maximises efficiency. For example, co-location means that the electricity has less distance to travel and more of it can be used to balance the grid. This means that more of the green energy produced by the wind farm can be utilised than if the EBI was located further away.

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		In response to a question from the ExA as to whether the Applicant had considered any alternative locations for the EBI, Mrs Brodrick confirmed that alternatives were considered for the onshore substation and the EBI on a co-locational basis for the reasons and advantages explained by Ms Hartland-Johnson.
2.2	The ExA asked the Applicant to provide detail on the measures taken to date in relation to EBI and the safety aspects of the design process.	Mr Watts referred to the Outline Energy Balancing Infrastructure HazID Report (REP2-029) which had been updated to incorporate the additional measures identified in the risk assessment. The HazID report is intended to outline how safety measures will be considered in the detailed design of the EBI and secured via Requirements 7 and 26 of the draft DCO. Mr Watts directed the ExA to section 4.3 which summarises the principles of prevention and hierarchy of control, which includes measures intended to avoid risks and then management measures in the event such risks occur (which would be agreed with local fire services). Mr Watts also directed the ExA to section 4.4 which provides specific examples of these risk controls and incident mitigations.
2.2	The ExA asked how the Applicant assessed the risk in the EBI in the absence of the energy design being known.	Mrs Brodrick explained that the parameters have been largely based on battery storage as this has been the most common form of energy storage used to date as the Applicant understands that these parameters are suitable for other types of energy storage that may come forward. Ms Smith explained that the methodology was for the environmental risk assessment was based on guidance from the Environment Agency ("**EA**") for preparing risk assessments for Environmental Permit applications. Ms Smith added that the Applicant considered this methodology to be appropriate for Hornsea Four due to its focus on industrial hazards and associated risks. In relation to identifying the potential source pathway receptor linkages, Ms Smith referred the ExA to the Outline Energy Balancing Infrastructure HazID Report (REP2-029). Ms Smith also referred to the World Bank International Finance Corporation, Environmental, Health, and Safety Guidelines and Guidance for Pollution Prevention and confirmed that the approach for the EBI risk is different to the Environmental Impact Assessment ("**EIA**") methodology for the other technical topic areas (APP-011). The risk assessment defines hazards that have the potential to cause or contribute towards a fire and then identifies the potential control measures to reduce that risk. The EBI approach is considered valid when considering the industrial nature of the proposed onshore substation and EBI and the emphasis there for ensuring the mechanisms are integrated into

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		the design to control the identified risk and to subsequently have in place the protective measures for the receptors. Ms Smith confirmed that given the nature and scale of the proposed onshore substation, the specific fire related hazards considered and the associated potential environmental risks, the approach used is considered by the Applicant to be both proportionate and appropriate. The ExA then queried whether the risk assessment is considered to be part of the environmental statement. Ms Smith confirmed that it is part of the Environmental Statement, but the approach taken was different. Mrs Brodrick added that Schedule 15 to the draft DCO would be updated to refer to the risk assessment. The ExA queried whether it is appropriate to base the methodology of the EBI risk on general battery storage technology and queried whether a change in technology would require the report to be redone and, if so, how that is secured. Ms Smith explained that if there was a change of technology, then the Applicant would consider the parameters and see if there were any material changes for the purposes of the environmental risk assessment. Mrs Brodrick added that the final HazID report is secured by requirement 26 of the draft DCO, which must be in accordance with the Outline HazID report. Requirement 30 of the draft DCO relates to any amendments to approved plans and contains the proviso that any amendments can be made provided that they do not give rise to any materially greater environmental effects from those assessed in the environmental statement (which includes the environmental risk assessment). The ExA asked how it would be determined whether a change is material. Mrs Brodrick confirmed that this decision would be for ERYC although the Applicant would have discussions in advance and ERYC would consult relevant stakeholders as part of the discharge of the requirement process set out in the draft DCO. Mr Sunman confirmed that ERYC would consult where necessary.
2.2	The ExA referred to Table 1 and Table 2 of the Environmental Risk Assessment of the Onshore Substation and Energy Balancing Infrastructure (AS-020). The ExA	Mrs Brodrick confirmed that Applicant would respond to this request in writing as the Applicant's relevant technical consultant was not available to provide oral submissions. The Applicant has provided this detail in **Table 2**.

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	asked the Applicant to explain the methodology used in relation to these, particularly why a medium risk rating means that an activity is considered acceptable and can be screened out.	
2.2	The ExA referred to Table 3 of the Environmental Risk Assessment of the Onshore Substation and Energy Balancing Infrastructure (AS-020). The ExA noted that the residual severity for fire is reduced from 3 to 2, with residual severity of explosion reduced from 5 to 2. The ExA queried what risk management techniques the Applicant are to be put in place to limit the severity in the event that either of these events occurs.	Ms Hartland-Johnson explained that there is a move to more compartmentalisation in the market which reduces fire risk. Mrs Brodrick confirmed that the Applicant would follow up in more detail in writing. The Applicant has provided this detail in **Table 2**.
Agenda Item 3- Landscape and visual effects		
3	The ExA quoted the view of ERYC that "*the benefits of a design review process would be very limited, given that the design of the substation buildings is driven by the technical requirements and the site is of limited sensitivity*" (REP4-065). The ExA asked the ERYC whether this view is compatible with the decisions of the Secretary of State ("**SoS**") in Norfolk Vanguard and Norfolk Borreas (the "**Norfolk Projects**") where the SoS required independent design reviews, particularly in light of landscape and visual effects concerns on Hornsea Four.	The Applicant notes that Mr Sunman referred to fact that the Norfolk Projects are different schemes and therefore ERYC maintains its position on this matter. Mr Sunman's view was that the landscape and visual effects arising from Hornsea Four did not necessitate an independent design review. Mrs Brodrick explained that it was important to note that whilst the Norfolk Projects required an independent design review, this is an unusual approach and is not a standard requirement in previous offshore DCOs or other energy DCOs with significant onshore infrastructure (for example, energy from waste facility DCOs). Mrs Brodrick emphasised that it was important to consider the reasoning behind the ExA and Secretary of State decisions to impose such requirements. Mrs Brodrick referred the ExA to paragraph 5.3.171 of the Norfolk Boreas Recommendation Report where the ExA had acknowledged that imposing an independent design review went against the views of both the applicant and local authority. However, the requirement was recommended due to the strong representations made by the local community, the fraught nature of engagement and concerns raised regarding the local authority's resource constraints. Mrs Brodrick added that both the Norfolk Projects and the East Anglia Projects included two separate substations for two separate but interrelated schemes and there was a need for a holistic

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		approach to design to be taken for those projects. The Applicant's position is that none of those particular circumstances apply to Hornsea Four and therefore the Applicant maintains its position that an independent design review is not necessary in light of the extensive design work undertaken to date (as detailed at Issue Specific Hearing 2 and supplemented in the Written Summary (REP4-036)) and for the reasons set out by ERYC. The ExA then referred to paragraph 4.75 of the SoS' decision on Norfolk Boreas and the fact that the Norfolk Projects (either alone or cumulatively) would have significant landscape and visual impacts. The ExA queried whether that is the case on Hornsea Four. Mrs Brodrick clarified that the Applicant's understanding is that that the requirement for the independent design review was not imposed as a result of the significance of impacts but rather due to the circumstances that had arisen during Examination relating to design and objections raised and as a result of lack of design detail undertaken pre-application for those schemes. As such, the Applicant's position is that an independent design review is not an automatic response to the level of significance of any landscape and visual effects but rather a result of the specific circumstances of those projects.
3	The ExA asked ERYC to provide an overview of the level of resources expected to be required if the SoS were minded to grant the DCO.	The Applicant notes that Mr Sunman confirmed that ERYC will have sufficient resources available and that the Planning Performance Agreement (PPA) provides an additional source of funds to assist with further resourcing should it be required. Mrs Brodrick added that Part 4 of Schedule 1 of the draft DCO sets out the procedure for the discharge of requirements, including set timescales and the ability for the discharging authority to request further information in order to ensure that a large scale nationally significant infrastructure project such as Hornsea Four is kept on programme. The Applicant will undertake significant work post consent to detail a detailed discharge programme for the requirements to ensure that appropriate consultation is undertaken prior to submitting details for discharge and to ensure that the discharging authority has sufficient resources. For example, the PPA enables external consultants to be appointed in the event that ERYC does not have sufficient resources in-house to deal with matters. This funding mechanism enables ERYC to increase the resourcing capabilities of their

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		departments as required. Mrs Brodrick referred to the Applicant's significant experience of constructing such projects (Hornsea Four being the fourth project it has taken through the process) and its experience in terms of ensuring that local authorities have sufficient resources to discharge requirements on programme. The Applicant was not aware of any reasons why Hornsea Four would be different to its previous projects.
3.1	The ExA referred to the Applicant's submission at Deadline 5 that provided additional viewpoints to illustrate the High Voltage Alternating Current ("**HVAC**") option (REP5-010) and also welcomed the additional information provided in the written presentation of the oral representations made at Issue Specific Hearing 2 (REP4-036). The ExA asked whether the Applicant is able to provide an overview of the timescales expected for the Applicant to provide its decision on whether to employ the HVAC or High Voltage Direct Current ("**HVDC**") technology.	Mrs Brodrick confirmed that the Applicant is unable to provide any more certainty over the type of transmission technology at this stage in the process.
3.1	The ExA queried whether the primary factor that contributes to the need for larger infrastructure for HVDC technology is due to the need to convert the power from HVDC to HVAC.	Mrs Brodrick confirmed that the convertor building is the largest building for the HVDC version. The ExA noted that the wind turbines generate HVAC power during their operation, so questioned in what ways is it beneficial to covert from HVAC to HVDC to transmit the power to the onshore substation, given the large visual impact. Mrs Brodrick explained that HVDC is a more efficient transmission method over a long distance for those offshore wind farm developments that are located further offshore. However, there are a number of reasons why there is a need for flexibility in terms of transmission technology notwithstanding the difference in effects from a landscape and visual perspective. ***Post-hearing clarification:*** The Applicant refers to its response to First Written Question PSD.1.1 (REP2-038) for further details of why flexibility in transmission technology is required.
3.1	The ExA referred to studies having been carried out by the Applicant to date in looking at the external appearance of	Mr Watts confirmed that the design measures have accounted for a maximum design scenario as set out in the project description (REP4-004). As part of the design process the

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	the HVDC buildings and asked the Applicant whether these studies been applied to the HVAC option too.	Applicant has developed HVAC and HVDC indicative models as they share overarching approaches to design. Mr Watts added that despite the buildings being larger for HVDC, the actual approach and principles relating to design are the same as those applied to HVAC as they are both a similar type of industrial development. The ExA added that it understands the reasoning for demonstrating the proposed solutions as they apply to the maximum design scenario. However, the ExA questioned how much work had been done to come to the correct design solution for HVAC as far as possible at this stage, and whether more work could be done. The ExA noted its concern that the current options do not appear to address the difference in scale, rhythm and massing for HVAC to the same extent which they do for HVDC. Mr Watts confirmed that in terms of colour application on buildings, this will be dependent on the height and massing of the buildings themselves and the Applicant has included this detail in the Outline Design Plan (REP4-021). Therefore, the most appropriate colour will be selected depending on the final building height as it will differ in terms of the background and perception of colour in the landscape depending on how tall the building is. Mr Watts added that the Applicant believes it has provided the appropriate overarching design principles that would be commensurate with the current point in the DCO process. The design will be developed further once the actual building parameters and transmission technology is confirmed.
Agenda Item 4 - Onshore water environment		
4	The ExA raised an action that the EA should listen to the recording of this Issue Specific Hearing 8 and provide any comments to the ExA as required.	N/A
4	The ExA requested an update from the Applicant on the status of discussions with the EA.	Mrs Brodrick confirmed that, as mentioned at Issue Specific Hearing 7 on the draft DCO, discussions relating to protective provisions for the EA are ongoing although the Applicant has not received any particular comments back from EA yet, either generally or specifically relating to Watton Beck. Mrs Brodrick also noted that discussions are ongoing for a voluntary land agreement, with the Applicant hoping to arrange a meeting with the EA in the following weeks to discuss any outstanding practical points arising from the heads of terms which have been in circulation.

Item	ExA Question/Context for discussion	Applicant's Response
		Mrs Brodrick reiterated that the Applicant hopes to reach an agreement with the EA soon and is confident that Hornsea Four can co-exist with the future flood prevention and drainage works that the EA wishes to undertake. Mrs Brodrick noted that it is a matter of agreeing the process for any identified works and any costs associated with such works. Mrs Brodrick also added that the Applicant appreciates the need for EA consent, and whilst the Applicant hopes that the EA will provide such consent, a lack of consent would require Article 6(1)(c) of the draft DCO to be removed. The Applicant would then require an environmental permit but the Applicant is not aware of any reason why such a permit would not be granted. The Applicant noted that if an agreement is not reached between the Applicant and the EA, then the ExA will require position statements to be submitted in writing at Deadline 7.
Agenda Item 5 – Socio-Economic and land use effects		
5	The ExA asked ERYC whether, in relation to its responses to the Examining Authority's Further Written Questions (ExQ2) (REP5-094) and the Statement of Common Ground submitted at Deadline 5 (REP5-044), whether ERYC had anything further to add with regards to land use and agricultural land use.	The Applicant notes that Mr Sunman confirmed that all matters have now been agreed.
5	The ExA asked the Applicant for comment from the Joint Local Access Forum relating to specific monitoring of soil reinstatement required for all the public rights of way affected (see REP5-094). The ExA noted that it is the preferred position of the ERYC highway authority to include a requirement in the DCO to undertake this monitoring on a regular basis for a seven-year period.	Mrs Brodrick referred to its response at Deadline 5A (REP5A-003). Mrs Brodrick referred to the draft DCO and Appendix C, paragraph 6.2.2.7 of the Outline Code of Construction Practice (REP4-019) to highlight that the Applicant's position in relation to monitoring requirements and monitoring period for affected public rights of way is already facilitated by documents before the Examination. Mrs Brodrick confirmed that the Applicant's position is that the requirements and specifications as currently drafted would enable longer monitoring if it is required for that particular public right of way. However, the Applicant did not consider it to be appropriate to apply a blanket seven-year monitoring period for all public rights of way. Mrs Brodrick referred back to Article 29 of the draft DCO which provides for a standard monitoring period of five years but allows for a longer period "*unless a different maintenance period is stated in the landscape management plan*

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		approved under requirement 8 or in the code of construction practice approved under requirement 17" (as per Article 29(11) of the draft DCO (REP5A-003)). The Applicant notes that Mr Sunman, on behalf of ERYC, had nothing further to add on this point.
Agenda Item 6 – Approach to within project cumulative effect		
6	The ExA referred to Table 3 of the Environmental Risk Assessment of the Onshore Substation and Energy Balancing Infrastructure (AS-020) which identifies individual hazards and receptors and the Applicant's responses to the Examining Authority's Second Written Questions (REP5-074), particularly the response to second written question 2.1. This highlighted the Applicant's intention to respond on the specific issue of the cumulative effect on individual receptors. The ExA noted that they are unaware of a specific response on this topic and requested the Applicant to signpost the ExA to this response.	Mr Watts summarised that in respect of intra cumulative assessment, multiple impacts on one receptor are typically dealt with at section 14 of each of the onshore EIA chapter. For example, in the Noise chapter there is an interrelated effect that deals with the combination of noise, visual amenity and traffic effects on human receptors and details of how mitigation measures combine in the management plans secured in the draft DCO. Mr Watts referred to the Health Impact Assessment (APP-056) which covers human health on a wider scale in terms of a local and national population level and takes each of the EIA topic areas in turn and covers more individual or specific matters of health impact assessment. The ExA referred specifically to Applicant's response to second written question 2.1 and queried whether there may be a further response related specifically to that question of cumulative effects on individual receptors. The ExA asked the Applicant to clarify whether there is another response or whether the response is limited to the answer given above. Mrs Brodrick clarified that the comments made by Natural England related to offshore matters but confirmed that part of the response to question 2.1 was missing and this would be provided at Deadline 6. Mr Watts clarified that in terms of the onshore impact assessment no concerns had been raised by Natural England. This is reflected in the Statement of Common Ground with Natural England which has full agreements in terms of the conclusions of the EIA onshore. The ExA queried whether the cumulative effects on individual receptors in the onshore environment particularly have been adequately addressed in the documents submitted to the examination so far.

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		Mr Watts confirmed that is correct. Mr Watts explained that the cumulative assessments already presented considers three forms of cumulative assessment: (1) multiple projects combining together and the potential for that to increase the significance of the effect; (2) the cumulative increase of impacts during construction and operation combining over time and impacting on certain receptors; and (3) the intra combination of multiple topic areas from the environmental statement combining together on receptors (for example, traffic, noise and air quality). Mr Watts confirmed that all three of those cumulative scenarios have been assessed in the onshore EIA, typically in section 14 of each chapter of the Environmental Statement.
Agenda Item 7 – Action points arising from the Hearing		
7	n/a	See **Table 2**.
Agenda Item 8 – Any other business		
8.1	The ExA confirmed no other business from its perspective and queried whether any interested party has any further points to raise in relation to the points from this agenda.	None of the interested parties raised any other business.
Agenda Item 9 – Close of Hearing		
	The ExA closed the hearing at 11:08.	

Table 2: Action Points.

Action	Description	Action by	Deadline	Applicant's Comments/where has the action been answered
1	Submit updated traffic data or summary of the updated data referred to on page 78 of [REP5-074].	Applicant	Deadline (**D**) 6	This information is provided in **G6.16: Onshore Substation Access Traffic Data Review**, submitted at Deadline 6.
2	Review minutes of the meetings of the Onshore Sub Station (OnSS) Consultation Group and provide signposting of where the minutes for the Parish Councils referred to in [REP5-074] can be found that include	Applicant	D6	It is noted that the minutes presented in **REP1-008** do not document the specific agreement of members of the working group to the selection of Option 4. The minutes for these sessions were drafted at the time to highlight the key issues and questions asked and to provide summary responses of what was discussed at the time to provide an aide memoire for the participants throughout the pre-application process. The Applicant did not note or identify everything raised.

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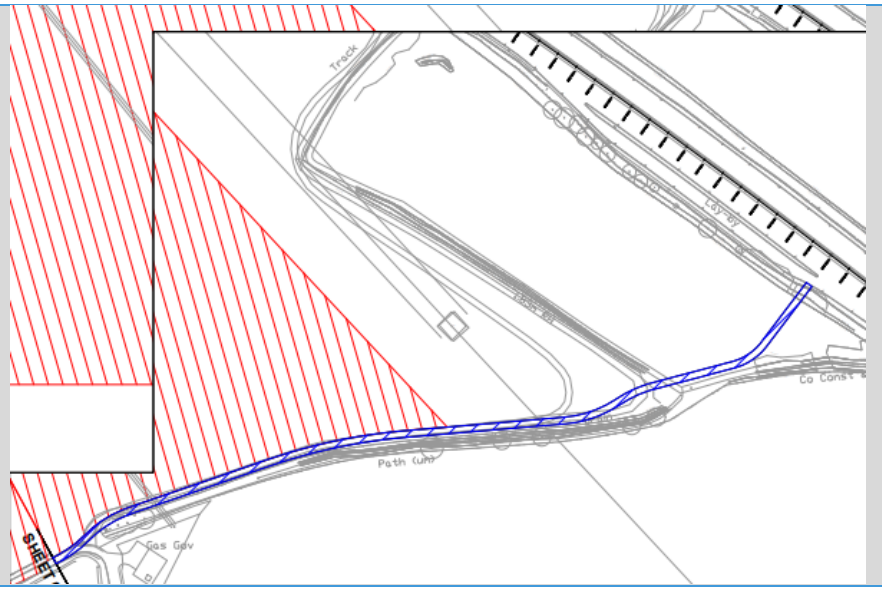
	confirmation of Option 4 as the preferred access road option.			The topic of access was discussed at these meetings however, amongst other topic areas, and as stated in the Applicant's response to TT.2.3, no stakeholder in this group requested access to be taken from an alternative access than the A1079. The discussion item on page 35 of **REP1-008** shows that the proposed access change was discussed and notes that due to consultation feedback, the Applicant was "*exploring opportunities to have all construction and operational access from the north, rather than bring traffic from the south through Cottingham*". Beswick Parish Council are noted as stating "*Maintaining access* [from the A1079] *is the most important thing*". There was support for the access selection throughout the meetings and this is supported by the fact that none of the participants at the OnSS Consultation Group raised any objections or concerns relating to the selection of Option 4 as the sole operational access for the OnSS at the subsequent targeted S42 consultation on access routes in March 2020. The Applicant is confident that local parish councils would agree with the above summary if asked to confirm their position.
3	Provide information on how details for the new access road to Jillywood Farm and other properties including Mouse Hill, which would arise as a result of Jocks Lodge works, would be determined and consulted upon.	ERYC	D6	The Applicant referred to a redline boundary for the A164 Jocks Lodge Highway Improvement Scheme that was used during the preliminary access design work for Hornsea Four. The Applicant refers to a more simplified version of such a boundary that was submitted as part of the planning application (reference 20/01073/STPLF) which can be viewed in "Red Line Boundary Jocks Lodge to Minster Way - Sheet 6 of 7". For ease of reference a screenshot has been provided below.

Action	Description	Action by	Deadline	Applicant's Comments/where has the action been answered
				
4	Confirm the distance between the nearest part of the proposed OnSS access road and the eastern boundary of Jillywood Lane Local Wildlife Site.	Applicant	D6	As presented by the Applicant at the onshore ISH 8, Jillywood Lane Local Wildlife Site (LWS) lies immediately adjacent to the OnSS access track and comprises an intact ancient species-rich hedgerow and medieval track/boundary. At its closest point, Jillywood LWS is 0.5 m from the OnSS access track and at its furthest point it is 4 m away. The access has been routed to utilise an existing gap in the hedgerow and as such does not intercept the LWS. Consultation with stakeholders (ERYC, Natural England and Yorkshire Wildlife Trust) has been undertaken by the Applicant to agree the sensitive crossing measures that will be implemented at this location to avoid any adverse impacts to this locally sensitive site.
5	Add the Environmental Risk Assessment of the OnSS and Energy Balancing Infrastructure (EBI) [AS020]	Applicant	D7	To be actioned at Deadline 7.

Action	Description	Action by	Deadline	Applicant's Comments/where has the action been answered
	to Schedule 15 of the draft Development Consent Order (DCO).			
6	Table 1 of the Environmental Risk Assessment of the OnSS and EBI [AS-020] uses a matrix approach to the scoring and rating of risk that shows how a low, medium or high risk rating is calculated by multiplying the likelihood of an occurrence by the severity of the hazard. Table 2 Action Summary indicates that both a low (ie green) and medium (i.e. orange) risk rating means that the activity is considered acceptable and can be screened out of the need for assessment. Provide details of the established methodology on which this approach is based, especially in terms of the medium (orange) risk rating?	Applicant	D6	The assessment methodology applied to the Energy Balancing Infrastructure (EBI) risk assessment is presented in **G1.2: Environmental Risk Assessment of the Onshore Substation and Energy Balancing Infrastructure (AS-020)**, and includes how risks were assessed and scored, therefore providing a clear and consistent approach for the reader. The use of matrix, i.e., red-amber (orange)-green 1 x 5 grid, assessment methodology has been established in the environmental, and health and safety, sector(s) for a number of years. It is regularly applied within Environmental Management Systems (EMS) that are independently assessed against the requirements of the International Standards Organisation (ISO) Environmental Management Systems Standards ISO14001:2015, to risk assess activities and their associated impacts. This assessment methodology is also used when assessing both environmental and flood risks as part of Environmental Permit applications, which have subsequently been submitted to, reviewed, and accepted, by the Environment Agency. Nevertheless, whilst the matrix assessment methodology for the consideration of environmental hazards and risks associated with industrial operations and permit applications is well established, the overall conclusions require the application of experienced professional judgement. The parameters, criteria and factors in this assessment have been set out and the risk assessments made by professional Chartered Environmental specialists.
7	Table 3 of [AS-020] shows that the residual severity of a fire on human, flora and fauna receptors has dropped from a 3 to a 2, and for an explosion has reduced from an initial severity of 5 to a residual severity of	Applicant	D6	While the overall risk rating for an explosion has decreased from five (5) to two (2), this score has been influenced by the severity of the risk, rather than the likelihood of the risk, which has remained at one (1) throughout the environmental risk assessment. The initial severity rating of five (5) is based upon the potential impact(s) of an explosion occurring before any control measures have been introduced or adopted.

Action	Description	Action by	Deadline	Applicant's Comments/where has the action been answered
	2 (after risk management techniques have been applied). Explain how these residual severity figures have been calculated?			Whereas the revised severity rating of two (2) is based upon potential impact(s) of an explosion following: • the choice of the type, nature and scale of technology to be used, which for this assessment is considered to have a low risk of explosion; and • the adoption and implementation of the required control measures The stated risk management techniques are comprehensive and incorporate a range of design, management, procedural and technology solutions, which when applied, will reduce the risks associated with the EBI, including those from explosions. Furthermore, the EBI will be subject to a Hazard Identification (HAZID) process, which will be secured through a DCO Requirement (refer to **F2.12: Outline Energy Balancing Infrastructure HazID Report (REP2-029)**). The risk management techniques stated in the Environmental Risk Assessment were provided by the Applicant's Engineering Design Team, based upon their specialist sector professional experience, informed by the latest technologies and best operational practice. The resulting residual severity values were calculated by applying relevant experience and professional judgement gained from working on a wide range of environmental projects across different development sectors, which have involved assessing environmental hazards and risks.
8	In the oral summary for ISH8 to provide the references for why in the Applicant's opinion there is a need for flexibility over the use of either High Voltage Alternating Current (HVAC) or High Voltage Direct Current (HVDC) notwithstanding the effect of HVDC from a landscape and visual perspective.	Applicant	D6	The Applicant considers that responses provided in **G2.2: Applicant's Responses to the ExA's First Written Questions (REP2-038)** sufficiently set out the justification for retaining flexibility of both HVAC and HVDC. In particular the Applicant's responses to PDS.1.1 and CA.1.11.

Action	Description	Action by	Deadline	Applicant's Comments/where has the action been answered
9	Listen to recording and provide any comments as required for the discussions on Agenda Item 4 – onshore water environment, with particular reference to whether the issues in relation to Watton Beck have been satisfactorily resolved.	Environment Agency (**EA**)	D6	N/A
10	If matters remain outstanding between the Applicant and the EA at the close of the Examination both parties to produce a position statement on any matters that are not agreed in the final Statement of Common Ground.	Applicant and EA	D7	N/A
11	Applicant confirmed that specific response to Further Written Question (ExQ2) ES.2.1 relates to offshore topics and will check whether cumulative effects on individual receptors for onshore environment have been adequately addressed. Applicant to confirm if specific response has been provided and if so signpost where it can be found, if not to provide a response.	Applicant	D6	The Applicant can confirm that question ES.2.1 relates to offshore topics and that this response was missing some text from the originally drafted response. The full text can be found below is Action Point 13. Additionally, the Applicant can confirm that all cumulative effects on individual receptors for onshore environment have been adequately addressed, as set out in the oral summary provided in **Table 1**.
12	Confirm as part of oral summary Mr Watts response on Agenda Item 6.	Applicant	D6	Please see oral summary provided in **Table 1**, under Agenda Item 6.
13	Provide the missing text from its response to ExQ2 ES.2.1 [PD-012]	Applicant	D6	Part of the text was missing from the response to ES2.1. The full response should have read:

Action	Description	Action by	Deadline	Applicant's Comments/where has the action been answered
				"The Applicant confirms that response to RR-029-6.8, RR-029-APDX:B-R and RR-029-5.38 clarify the use of the Source-Pathway-Receptor (SPR) model approach to Environmental Impact Assessment (EIA), in general terms. Upon review, the Applicant provides a specific response about the potential to miss cumulative effects on an individual receptor. *The Applicant feels that there is some confusion in the interpretation and application of terms cumulative and inter-related effects as set out in Natural England's query. For clarification, cumulative effects can be defined as effects upon a single receptor from Hornsea Four when considered alongside other proposed and reasonably foreseeable projects and developments. The approach for cumulative effects is based upon the PINS Advice Note Seventeen: Cumulative Effects Assessment (PINS 2019). The Applicant confirms that cumulative effects are assessed on a receptor-by-receptor basis within each respective ES Chapter of the EIA.* *The inter-related effects assessment considers the effects of multiple impacts arising from the construction, operation and decommissioning of Hornsea Four upon the same receptor (interpreted as the cause of Natural England concerns). Each respective receptor chapter of the ES presents an inter-related effects assessment. The Applicant interprets the question to reflect a misinterpretation between inter-related effects and cumulative effects, which should read inter-related effects. These have been assessed and are supplemented at Deadline 5 by the report Indirect Effects: Forage Fish and Ornithology.* *Finally, the Source-Pathway-Receptor (SPR) model approach to assessment is a standard EIA approach and doesn't present anything novel into the EIA processes and has not led to any failure in assessment. The Applicant is confident that the ExA and the SNCB can have confidence in the adequacy of the EIA to present and assess both cumulative and inter-related effects (the Applicant being confident that the latter (inter-related effects) has been misinterpreted and confused with the term cumulative effects).*

Action	Description	Action by	Deadline	Applicant's Comments/where has the action been answered
				Notwithstanding, and to address concerns raised by Natural England, the Applicants submits Indirect Effects: Forage Fish and Ornithology (G5.7) at Deadline 5." G5.7 was submitted at Deadline 5 under reference **REP5-085**.