Hornsea Project Four

Written Summary of the Applicant's Oral Case at Issue Specific Hearing 2

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Prepared	Pinsent Masons, May 2022
Checked	Faye McGinn, Orsted,, May 2022
Accepted	Thomas Watts, Orsted, May 2022
Approved	Julian Carolan, Orsted, May 2022

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1 Introduction

1.1.1.1 Issue Specific Hearing 2 (ISH2) on the onshore environmental matters for the Hornsea Project Four Offshore Wind Farm took place on 26 April 2022 at 09:30 am and was held virtually, with attendees attending via Microsoft Teams.

1.1.1.2 The ISH2 broadly followed the agenda published by the Examining Authority (the ExA) on 19 April 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
- Traffic and Transport and Public Rights of Way
- Historic Environment
- Noise, Vibration, Electro Magnetic fields (EMFs) and Light
- Onshore Ecology
- Onshore Water Environment
- Socio-Economic and Land Use Effects

Table 1: Summary of the Issue Specific Hearing 2

Item	ExA Question/Context for discussion	Applicant's Response
Agenda item 1 - Welcome, introductions, arrangements for the hearing		
1	Welcome, introductions, arrangements	Applicant The representatives for the Applicant introduced themselves as follows: - Claire Brodrick (Solicitor at Pinsent Masons LLP for the Applicant) - Thomas Watts (Onshore Environment and Consents Specialist at Orsted for the Applicant) - Claire Smith (Onshore Project Manager at Royal Haskoning DHV for the Applicant) - Andrew Ross (Transport Planning Technical Director at Royal Haskoning DHV for the Applicant) - Paul Macrae Landscape Architect at Land Use Consultants ("LUC") for the Applicant) East Riding of Yorkshire Council ("ERYC") The representatives for ERYC introduced themselves as follows: - Jennifer Downs (for ERYC as local planning authority) - Andrew Forsey (for ERYC as highways authority) - Jonathan Smith (for ERYC as principal officer in environmental control) - Patrick Wareham (as part of ERYC's countryside access team) - Simon Parker (as ERYC's area rights of way officer) Environment Agency ("EA") The representatives for the EA introduced themselves as follows: - Lizzie Griffiths (planning specialist) - Andrew Pattinson (flood risk adviser) The Examining Authority ("ExA") noted that it had received apologies from Historic England and Network Rail and that Lockington Parish Council had indicated it would attend the hearing but no representatives had yet joined.
Agenda item 2 - Proposed development, site selection and design		
2.1 and 2.2	The ExA asked the Applicant if it was the case that the proposed onshore substation and energy balancing infrastructure (EBI) would be the elements that have the greatest onshore visual impact over the lifetime of the project?	Ms Brodrick for the Applicant confirmed that was correct as the onshore substation and EBI are the only onshore above ground elements of the Hornsea Four project.

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2.1 and 2.2	The ExA noted that in its response to First Written Question ("FWQ") DGN.1.2, the Applicant had set out its design principles which underwent refinement, which, the ExA assumed, was an internal process. The ExA noted that in that response, the Applicant had described the design process as being engineering-led but asked the Applicant to describe that process in a little more detail.	Ms Brodrick for the Applicant confirmed that the Applicant had set out the design process in its response to FWQ DGN.1.2 (REP2-038) and that the Applicant considers that it has complied with paragraph 4.5 of National Policy Statement EN1 which relates to good design. Mr Watts for the Applicant confirmed that the design process for the onshore substation and EBI was predominantly a technically driven process. As such, the design for the onshore substation and the EBI, including the layout, vernacular and structural design of the buildings, was fundamentally informed by technical requirements for efficiency purposes and health and safety requirements. The shape and size of the buildings is therefore constrained by those requirements. The Applicant's internal technical specialist and external design consultants have helped with the optimised indicative layouts for the onshore substation and EBI. Mr Watts added that additional design aspects, such as materiality, colour application on buildings and landscape planting, were predominantly informed by independent design consultants at LUC. Mr Watts noted that a separate team at LUC were responsible for the Landscape and Visual Impact Assessment for Hornsea Four and there was co-ordination between the two teams. Mr Watts explained that the Applicant had also relied on local stakeholder input, predominantly from the local planning authority, but also the onshore substation working group, within which the design had been discussed at a number of meetings and workshops. For example, the Applicant consulted with the onshore substation working group on the application of colour to ensure that it is appropriate to the local landscape. Mr Watts confirmed that the design measures are secured in the outline design plan and the outline landscape management plan which are secured via requirements in the DCO.
2.1 and 2.2	The ExA noted that there were a number of technical parameters that govern the volume and massing of the enclosures and asked how the Applicant had arrived at its decision as to how the buildings are expressed externally. The ExA then clarified that it wanted to know how the Applicant got to the point of deciding that the best way to address the impact of the buildings was to put colour on them.	Mr Watts explained that the use of colour was informed by independent design consultants through previous experience and best practice. Mr Watts clarified that the application of colour was not necessarily needed to mitigate potential impacts of the onshore substation on the landscape but that it is certainly seen as the most appropriate method of application. Mr Watts noted the use of colour goes above and beyond the standard approach taken to mitigating similar buildings. For example, the application of colour incurs additional cost and timescale implications in terms of construction. The Applicant considers that due to the placement of the buildings, and the local land surrounding the landscaping vernacular, the addition of colour in this instance this is the most efficient and effective method of mitigating LVIA impacts. Mr Watts referred to the three options put forward by the Applicant, including simple

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		banding, adaptive banding or adaptive panelling. Mr Watts noted that adaptive panelling was the preferred option for the onshore substation working group. Mr Watts reiterated that it was important to note that that this mitigation was in addition to landscaping the surrounding area. Mr Watts explained that it was also important in the application of colours to consider the background that is behind the onshore substation and EBI buildings and that not all colours are applicable to all directions in this circumstance. For example, if you have a view from lower down with the sun, with the sky in the background, then it is likely to be lighter colours that will be more effective. Alternatively, looking down on the site, it is more likely that darker green colours would be more effective. Mr Watts referred to the results of the Applicant's design consultants and the local consultation on the design of the onshore substation and EBI.
2.1 and 2.2	The ExA asked which options for mitigation other than colour the Applicant considered and if other ways of expressing the building envelope had been considered.	Mr Watts explained that early in the design process the Applicant considered a number of different options regarding the shape of the building but these were deemed technically not feasible as the overall size of the buildings would be influenced by them. For example, if the buildings were to have sloping roofs or different shaped foundations, then the equipment would need to be placed differently, which would increase the height or parameters of the buildings. Mr Watts confirmed that the Applicant was not aware of any significant, useful or effective methods of mitigating impacts from buildings such as those required for this type of apparatus that would not have a materially negative impact on technical design and feasibility. For example, if the Applicant were to amend the materials used on the exterior of the buildings, that could incur fire risks. Mr Watts added that the Applicant had also considered the physical shape of the facades. For example, methods to avoid solar glare or reflection and this is referred to in the Outline Design Plan ("ODP") (APP-248).
2.1 and 2.2	The ExA asked whether LUC or other consultants had provided architectural advice on the design of the substation or EBI. The ExA then asked why the Applicant did not believe it was necessary to have architectural input at an early stage of design and queried how the mitigation of impact of the buildings could be meaningfully assessed	Mr Watts confirmed that the Applicant had not obtained specific architectural advice from a chartered architect. However, the early advice from LUC did comprise input on the shape of the buildings in the vernacular. Those recommendations then went through a technical feasibility review. The Applicant did not see the need for input from a chartered architect at that stage of the design process. Mr Watts emphasised that the design was at an indicative layout stage and the principles in the ODP would inform the final design. Mr Watts reiterated that the Applicant had gone above and beyond what is normally required for this type of apparatus and the proposed design was certainly fit for purpose.

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	if the buildings had not gone through a process of design that has involved an appropriate professional.	Ms Brodrick added that the Applicant has demonstrated that is had complied with the requirements for good design set out in paragraph 4.5 of NPS EN1, which expressly acknowledges that there is likely to be very limited choice for the external appearance of such energy infrastructure. Ms Brodrick noted that Mr Watts had explained that the size and scale of the buildings and infrastructure had been predominantly led by technical requirements. Where there have been opportunities to demonstrate good design and improve the external appearance of the buildings to ensure that they sit as best as they can within the existing landscape, these opportunities (as described by Mr Watts) have been taken by the Applicant. Ms Brodrick reiterated that whilst it was accepted that there will be significant LVIA impacts as a result of the onshore substation and EBI, the Applicant is bound by the technical requirements and this is expressly recognised in NPS EN1. Ms Brodrick confirmed that the onshore substation and EBI had gone through a design process and the Applicant had sought external expertise in order to produce as good a design as possible. The Applicant therefore considered that it has taken an appropriate approach which is standard for energy infrastructure projects in terms of design for onshore elements and that is an approach which is primarily technology focussed. Ms Brodrick reiterated the Applicant's position that it has fully complied with the requirements of NPS EN1 relating to good design. **Post hearing comment:** *The Applicant can confirm as part of the Preliminary Environmental Information Report, the first iteration of the 'Design Vision' for Hornsea Four included information on buildings shapes (including cylindrical and angular) and layouts (including dispersed, central, linear and edge designs), alongside justification for why such measures were discounted due to technical feasibility. This demonstrates that such design considerations were taken into account early in the design process. Extracts from the PEIR Design Vision are presented below to provide context to the early design process.* *The Applicant can also clarify that whilst chartered architects have not been involved in the design, individuals with qualifications associated with Landscape Architecture and Urban Design have been. The lead responsible has 26 years of experience in urban design and is a member of the Urban Design Group and Design Review Panel. It is considered that the employment of independent design consultants with*

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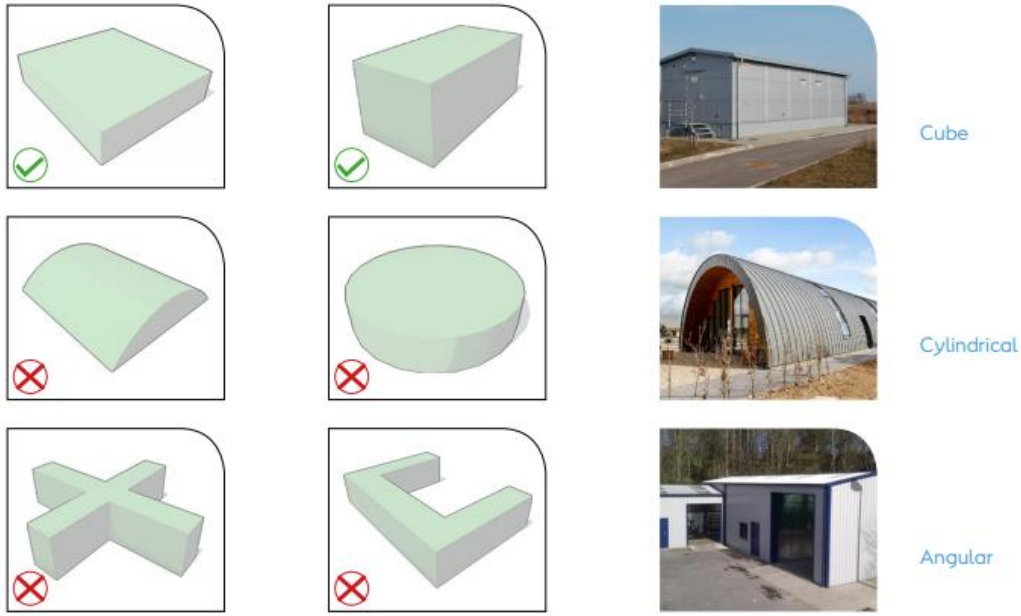
		a fresh perspective on infrastructure design, combining both landscape architecture experience and urban design experience was valuable. These skillsets enabled an understanding of the landscape sensitivities and the context the project sits within. Furthermore, the team member responsible for the selection of colours for the building materiality has a background in graphic design, which provided fundamental skills for the process. 

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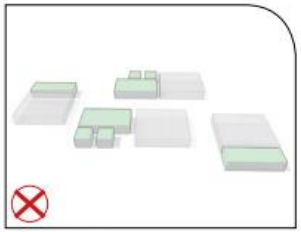
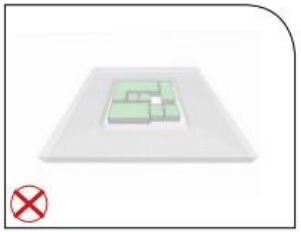
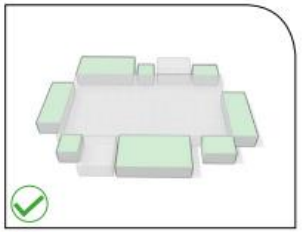
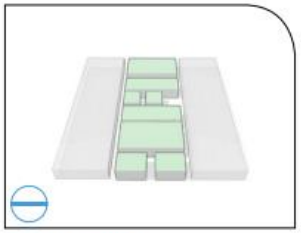
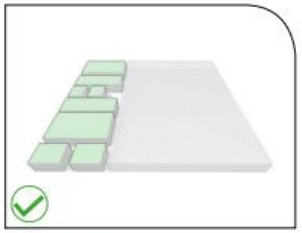
		 Dispersed 3.3.6 - Increased visual impact due to the large area of development and amount of visual clutter creating and disorder.  Central 3.3.7 - Placing build form centrally with electrical apparatus at the perimeter of the site reduces visual screening creating a chaotic aesthetic.  Edge 3.3.8 - Built form located at the edge of the site would provide greater visual screening of the electrical apparatus within the site.  Linear central 3.3.9 - Aligning the built form creates unity and order which would limit any visual impact.  Linear edge 3.3.10 - Similar to the linear approach this arrangement creates order and further reduces visual impact.
2.1 and 2.2	The ExA asked the Applicant about the colour blocks proposed for the onshore substation and EBI facades and noted that they were loosely defined at this stage. The ExA queried why the colour blocks needed to be so vague and how it will go about securing agreement for the shades of colour proposed. The ExA queried why the Applicant could not use an industry-standard colour reference as it would be much easier for all stakeholders to understand. For example,	Mr Watts explained that the colours outlined in the ODP are taken from the local landscape and were suggested by the Applicant's design consultants. The Applicant is not able to provide specific colour references at this point in time due to potential supply chain implications in the future. For example, not all manufactures of substation facades can supply facades in all colours and specifying an exact colour could result in a delay in the future detailed design process. However, the Applicant is confident that the colours will be close to those in the ODP. Mr Watts explained that the ODP set out three options so that local stakeholders, including ERYC, are able to inform the selection at the detailed design stage.

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	one person's interpretation of olive green may be very different to another's.	Mr Watts confirmed that the Applicant would take the point away and assess whether more information could be included in the ODP so as to provide greater certainty on the colours identified.
2.1 and 2.2	The ExA thanked the Applicant for providing built examples which could be visited to show how those structures had used colour application to reduce visual impact and stated that the level of engagement from the Applicant was very much welcomed. However, the ExA queried whether the examples provided were comparable and asked if the Applicant could provide more appropriate precedents.	Mr Watts stated that it was important to note that not all developers of substations had made such commitments in terms of quality of design and colour application, so there were limited examples to draw from. However, he confirmed that the Applicant would try to find some more industrial examples. Mr Watts referred to Hornsea Project Two where the panelling is banding in blue. The Applicant notes that ERYC had no comments on design or colour application at this stage. **Post hearing clarification:** *The Applicant can correct that Hornsea Project One should have been referred to – which is directly adjacent to Hornsea Project Two.*
2.1 and 2.2	The ExA noted that it could not see that FWQ DGN.1.4 had been answered by ERYC and asked ERYC whether the wording of requirement 7 was sufficient in its view to secure the detailed design of the substation in line with agreed parameters. It also asked ERYC whether it believed it had sufficient design expertise available for the discharge of requirements and if not, what support may be required.	Ms Downs for ERYC stated that she did not know why that question had not been answered but ERYC would respond in writing for deadline 4. Ms Brodrick noted that ERYC had responded to FWQ DGN.1.4 in REP2-061 submitted at deadline 3. In response to the question on whether the design would benefit from an external design review process, Ms Downs noted that ERYC would like to consider that and respond in writing. The Applicant notes that the ExA will clarify what it meant by an "external design review process" in the event that ERYC considered it was needed.
2.3	The ExA thanked the Applicant for the detail submitted in response to FWQ DGN.1.1. The ExA asked the Applicant to confirm that HVAC design options had not been included in the photomontage visualisations	Ms Brodrick confirmed that as the photomontages are based on a maximum design scenario, they amalgamate designs for HVDC and HVAC. In response to a further question from the ExA, Ms Brodrick confirmed there was no standalone representation of the HVAC or HVDC design as part of the maximum design photomontages. Mr Macrae on behalf of the Applicant clarified that there are two sets of photomontages which are described in the Landscape and Visual Impact Assessment Chapter of the Environmental Statement.

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		The first set of photomontages is based on the maximum design scenario and the second is based on the illustrative design of the HVDC substation, which was selected as it is considered to be the worst case scenario in terms of visual impact compared to the HVAC scenario. The ExA asked Mr Macrae to confirm that the maximum design scenario photomontage was the one depicted in transparent colour and the illustrative HVDC option was depicted in solid 3D blocks. Mr Macrae confirmed that was correct. The ExA noted that the scale massing on the HVAC option differed significantly from the HVDC option. Without depicting the photomontages in the same way, the ExA queried how the Applicant could meaningfully show that one option was worse than the other in terms of visual intrusion. Mr Macrae reiterated that the maximum design scenario photomontages depict the overall worst-case scenario based on the parameters in the project envelope, which covers both HVDC and HVAC options. Mr Macrae added that the LVIA is based on the maximum design scenario. In response to a question from the EXA as to whether there would be benefit in seeing both HVAC and HVDC options in 3D, Mr Macrae advised that his understanding was that illustrative visualisations were based on a purely indicative depiction of what the substation might look like. At the hearing Ms Brodrick referred to Appendix C of REP2-038 which states that in terms of height and scale of the main buildings for the substation and EBI, the maximum design scenario is the same for both the HVAC and HVDC options. The main difference for the substation is the maximum number of secondary buildings, as there are more secondary buildings for the HVAC option than for HVDC. **Post hearing clarification:** *The Applicant notes that in Appendix C of REP2-038, the maximum main building height for the HVAC substation is stated to be 25m. This was a typographical error and the maximum main building height for the HVAC substation is actually 20m. A revised version of the table is annexed to this written summary in* ***Appendix A****.*

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		Ms Brodrick confirmed that the Applicant would consider whether it was possible to provide a visualisation for the HVAC solution and if so, the Applicant would confirm at deadline 4 when such visualisations could be submitted into Examination.
2.3	The ExA referred to figures 5 and 6 on page 17 of the Design Vision Statement (APP-048) and asked the Applicant to confirm whether the figures were correctly labelled.	Mr Watts confirmed that the figures were incorrectly labelled and that the labels should be the opposite way round. Mr Watts confirmed that the indicative layouts in figures 4 and 5 on pages 16 and 17 of the ODP were correct.
2.3	The ExA asked the Applicant whether it believed that viewpoint 6 was accurately depicted in the photomontages in light of the height of the adjacent wind turbine.	Mr Macrae confirmed that as far as the Applicant was aware, all montages are based on the same model and use the same parameters and input. As such, the Applicant was confident they were accurate. However, Mr Macrae noted the ExA's query regarding the depiction of the wind turbine and confirmed that the Applicant would double check the photomontage and respond in writing.
	The ExA asked the Applicant why it considered that it was not necessary to include photomontages of the onshore cable corridor route during construction.	Mr Macrae noted that the landscape and visual effects of temporary construction works were assessed as part of the PEIR and no significant effects were found. As a result, such effects were therefore not considered in further detail in the Environmental Statement. This is set out in table 4.10 of the Landscape and Visual Impact Assessment Chapter of the Environmental Statement (APP-028). As the Applicant was not assessing the construction effects in the Environmental Statement, it was not deemed necessary or proportionate to include photomontages or visualisations or those temporary works. In response to a question from the ExA for an estimate of the duration of construction works for the onshore cable corridor, Mr Watts clarified that the total period for construction of the onshore cable corridor was 30 months with an additional preceding period of three months for the creation of compounds and three months at the end for their removal. The construction works could take place at any point within those 30 months. Reinstatement of landscaping would take place at the end of construction in the later months of that 30-month period. Mr Watts reiterated that no significant landscape or visual effects were identified for construction of the cable corridor and stated that the Applicant was not aware of similar requests being made for photomontages of temporary construction cable corridor on other offshore wind farm projects.
2.4	The ExA asked the Applicant to confirm how the permanent fencing and screening of the substation and EBI would be secured.	Ms Brodrick acknowledged that the current drafting of requirement 12 does not refer to where the screening measures are secured and stated that the Applicant would amend the drafting by deadline 4 to explain how fencing and other means of enclosure are secured.

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Agenda item 3- Landscape and visual effects		
3.1	The ExA asked for an update on the status of negotiations between the Applicant and ERYC.	Ms Brodrick confirmed the position was as per the SoCG submitted at deadline 3 (REP3-013) and that discussions between the Applicant and ERYC were ongoing. Mr Watts confirmed that the outstanding points were in relation to photomontages and commitments in the outline landscape management plan ("OLMP") on the maintenance of landscaping. The Applicant notes that Ms Downs for ERYC clarified that in respect of the photomontages, and based on the discussions in the hearing, ERYC would like to see the Applicant's submissions at deadline 4 before confirming that it was satisfied with the approach taken.
3.2	The ExA noted that paragraph 4.1.1.3 of the OLMP had been revised to include text to refer to UK provenance of hedges and plants in response to the EA's relevant representation. The ExA noted that the additional text requires the landscaping contractors to consider the sourcing of plant stock where feasible and subject to supply chain. The ExA asked whether ERYC and EA considered that the wording was strong enough to ensure that appropriate hedgerow species are soured.	Ms Downs confirmed ERYC was satisfied and Ms Griffiths for the EA confirmed the EA was satisfied with the wording. In response to a question from the ExA as to whether the wording was strong enough to secure the appropriate sourcing of hedgerow species, Ms Brodrick explained that there is a hierarchy in place such that the contractor must first try to source locally before looking at UK availability and only then looking further afield. Ms Brodrick emphasised that the Applicant does need a certain amount of flexibility to ensure that Hornsea Four is deliverable within the timescales required. It was therefore important to have flexibility to source species outside of the local area in order to meet the timescales for the project.
3.3	The ExA asked the EA for an update on the designation status of the Yorkshire Wolds as an area of Outstanding Natural Beauty	Ms Griffiths stated that the EA would like to provide the update as a written response. Ms Brodrick noted that Natural England ("NE") would be the appropriate body to comment on the designation status. Ms Downs on behalf of ERYC noted that the evidence gathering for designation was underway and will continue to take place over summer. Ms Downs on behalf of ERYC agreed that NE would be the appropriate body to comment. In response to a question from the ExA asked as to whether the Environmental Statement would need to be updated to take account of the change in designation status, Ms Brodrick referred to the Applicant's response to FWQ LV.1.1.4 (REP2-038) which sets out the reasons why the Applicant

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		considers that the assessment would remain adequate even if the designation happened before the Application was decided. Ms Brodrick added that the Applicant's position was that the sensitivity of the receptor would change but the proposed mitigation and conclusions of the EIA would remain the same. Ms Brodrick confirmed that the Applicant would provide written confirmation on the point should the circumstances arise (for example, as part of a request for further information from the Secretary of State). Ms Brodrick reiterated the Applicant's position that it did not consider any changes to the scheme or proposed mitigation would be required if the designation proceeds.
3.4	The ExA asked the Applicant to confirm that the landscape and visual mitigation it has proposed is sufficient to mitigate the impacts of the onshore substation and EBI to an acceptable level.	The Applicant confirmed this was the case. The ExA queried whether the Applicant's response to FWQ DGN.1.5 and the updated illustrative views in REP3-009 demonstrate that the proposed buildings are of such a scale that they cannot be appropriately mitigated. Mr Macrae advised that the viewpoints referred to within the ODP show relative scale as opposed to visualisations. They are not a depiction of what someone using the footpath would see. Regarding mitigation, it is true that the structures are large and that it is not possible to hide them with landscaping or screening, which is why the Applicant has looked at other forms of mitigation through design. The Applicant notes that Ms Downs on behalf of ERYC noted that mitigation of visual impacts was addressed in ERYC's Local Impact Report and paragraph 4.2.4 sets out ERYC's conclusion.
3.5	The ExA asked ERYC whether it was happy with the amended drafting at requirement 9 of the DCO.	The Applicant notes that Ms Downs on behalf of ERYC noted that ERYC would respond in writing at deadline 4. In response to a question from the ExA as to why an outline landscape management and maintenance plan for Work No. 7(f) was not provided, Ms Brodrick explained that the detail in the landscape management and maintenance plan for Work No. 7(f) is entirely dependent on what type of landscaping that has actually been planted pursuant to the approved final landscape management plan. The Applicant therefore did not consider that an outline plan at this stage in the process would aid ERYC as it would not contain sufficient detail. Ms Brodrick confirmed that there was a two stage approach being put forward. Ms Brodrick clarified that all landscaping for the onshore substation must be approved under the landscape management plan. The final landscape management plan must be

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		in accordance with the outline landscape management plan that is currently part of the DCO Application. Once planting has been completed at the substation, the Applicant's intention is for the landscape management and maintenance plan for Work No. 7(f) to be produced that will include maintenance obligations from the five year point onwards and submitted to ERYC for approval. The Applicant considered that this approach addressed ERYC's concerns regarding longer term maintenance of the landscaping. Ms Brodrick stated that the Applicant considers that the amendments to requirement 9 of the DCO made at deadline 3 secure this process and are based on some suggested drafting provided by ERYC. However, the Applicant notes that further amendments to the drafting may be required once ERYC has had chance to review and comment.
Agenda item 4:- Traffic and transport and public rights of way		
4.1	The ExA shared its screen with the attendees at the hearing and noted table 2 in the Traffic and Transport Assessment (APP-125). The ExA asked if there was an error with the calculations for month 6 onwards.	Mr Ross on behalf of the Applicant confirmed this was indeed an error at month 12 but explained that the error was not material to the assessment since none of the cells in the rows for month 6 onwards were coloured orange, noting that only the orange cells contributed to the maximum design scenario. Mr Ross added that the table represented an aggregation of the maximum daily demand per activity based on the information available to the Applicant at this stage in the process. However, the Applicant confirmed that it would submit an updated table 2 for month 6 onwards at deadline 4. The ExA noted that in its response to FWQ TT.1.9, the Applicant cited Appendix J of the Technical and Transport Report. The ExA wanted to know whether the figure for the number of people using the primary construction compound only referred to the number of people arriving at the compound in the morning and leaving in the evening or whether it also included all of the trips in and out of the compound each day (e.g. meetings, lunch breaks etc). Mr Ross confirmed that the figure of 54 personnel per day relates to primary arrivals and departures although there is a contingency figure of 10% applied which would cover any incidental trips that may occur. Mr Ross stated that with projects of this size, it is envisaged that each work unit will be self-contained and that there will be welfare facilities on site which should limit the number of trips generated on the public highway.

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		The ExA asked how the figure of 54 personnel was connected to the figure in table 5 of the Traffic and Transport Assessment which refers to a maximum of 184 maximum personnel on the cable corridor and 250 if the onshore substation personnel are also included. Mr Ross advised that table 5 establishes the maximum number of personnel that could be attracted to the access points in total per day. As the Applicant does not have detailed construction phasing information at this stage, it had taken the figure of 54 personnel per day per access point and had assigned them to the local highway network thus assuring that all links within the network are subject to the maximum design scenario. The Applicant then used the maximum number of personnel per day in table 5 as an effective cap so that it did not overcount personnel on connector roads (typically A roads) where all trips from the local network diverge. As such, the methodology employed is a way of ensuring the Applicant accounts for all local trips on the local highway as part of the maximum design scenario. Mr Ross acknowledged that it was quite a complex concept to convey and offered to follow up in writing with some screenshots or explanatory notes which may be helpful to aid understanding for the public reviewing the Traffic and Transport Assessment. The Applicant notes that Mr Forsey on behalf of ERYC confirmed ERYC had no further comment.
4.2	The ExA noted that it had read the representations from Lockington Parish Council and the responses to FWQ TT.1.15, TT.1.16 and TT.1.17. The ExA asked the Applicant how far along Station Road West from the junction the logistics compound would be located.	Mr Ross on behalf of the Applicant noted that the distance was approximately 75 metres but the exact distance would be confirmed in writing at deadline 4. In response to a request from the ExA, Ms Brodrick confirmed that the Applicant would provide details of the width of Station Road West at that point (approximately 75 metres from the junction) and to also provide the width of the road on Station Road East at an equivalent point from the crossroads at deadline 4.
4.3	The ExA asked the Applicant to provide an update on discussions with Network Rail.	Ms Brodrick confirmed that as per the email submitted to the Planning Inspectorate by Network Rail's solicitors the day before the hearing, the Applicant had agreed Heads of Terms with Network Rail in respect of the outstanding level crossing (link 24). Ms Brodrick explained that the outstanding issue will be resolved by updates to the protective provisions and additional provisions in the Outline Construction Traffic Management Plan ("OCTMP") in relation to safety briefings to be given to HGV drivers. There will also be a separate side agreement between Network Rail and the Applicant. Ms Brodrick added that the Applicant was confident that those agreements will be concluded prior to the close of Examination. Ms Brodrick advised that the side agreement would not be submitted into

Item	ExA Question/Context for discussion	Applicant's Response
		Examination as it was a commercial agreement but that the updated protective provisions in the draft DCO would include provisions relating to the approval of the OCTMP by Network Rail.
4.3	The ExA asked the Applicant to clarify how it had identified the peak number of construction vehicles in table 7.18 of the Traffic and Transport Chapter of the Environmental Statement (APP-031).	Mr Ross advised that the Applicant's response to FWQ TT.1.8 sets out peak construction flows of 93 HGV movements. The Applicant has not yet determined what the duration of that peak would be. However, the average 2-way construction movements of 33 HGV movements indicates that the peak figure is very temporal and short-term as evidenced by the difference between the peak and average movements.
4.3	The ExA asked the Applicant if the average number of HGV movements quoted was over the highest year or the whole construction period.	Mr Ross confirmed that it was the average over the highest year.
4.3	The ExA asked the Applicant when it would be likely to undertake construction activities that would increase HGV movements over Wansford Road level crossing, should the DCO be granted.	Ms Brodrick advised that the Applicant did not yet have this level of detail but that it could feasibly need to utilise the level crossing from the outset of construction activities. Ms Brodrick added that the agreement reached with Network Rail will include provisions relating to prior notification and engagement with Network Rail before the level crossing is utilised by construction HGVs.
4.4	The ExA shared its screen with the attendees at the hearing and asked the Applicant to confirm the distance between points 25c and 25d on sheet 28 of the Public Rights of Way Plans.	Ms Brodrick referred to Part 2 of Schedule 4 of the draft DCO which sets out the maximum extent of the diversion permitted by the DCO. As such, the distance would be a maximum of 602 metres. In response to a question from the ExA, Ms Brodrick confirmed that the 602 metres would be the worst-case scenario and would apply if the user of the footpath needed to go the long way around as a diversion. The ExA asked what the best-case scenario would be for the distance between the two points if the diversion was made to be as short as possible. Ms Brodrick advised that the Applicant did not have this information to hand but that it would confirm in writing at deadline 4. The Applicant notes that Mr Wareham on behalf of ERYC acknowledged that the Applicant had already submitted an outline scheme for the diversion of the public right of way in question and ERYC would therefore want to make sure that the line of any diversion is in accordance with the plans and the surface condition is agreed.

Item	ExA Question/Context for discussion	Applicant's Response
Agenda item 5 – Historic environment		
5	Procedures to ensure effective protection of heritage assets during the construction process.	Agenda item deferred to written submissions as Historic England were not in attendance.
Agenda item 6 – Noise, vibration, EMF and light		
6	The ExA asked ERYC to confirm there were no outstanding matters of concern (as had been detailed in the SoCG submitted at deadline 3) in relation to noise, vibration, EMF and light.	The Applicant notes that Mr Smith on behalf of ERYC confirmed that there were no outstanding matters of concern. The ExA asked the Applicant to confirm that where it had used the word "permanent" in its response to FWQ NVL.1.16, it did not mean that the lighting would be permanently illuminated, rather that it was referring to lighting which would be permanently installed. Ms Brodrick confirmed that was correct, the word "permanent" had been used to distinguish it from lighting that was in place during construction. The lighting would be permanently in place at the onshore substation but would not be permanently illuminated.
Agenda item 7 – Onshore ecology		
7	The ExA acknowledged that there was currently no statutory requirement for the Applicant to provide biodiversity net gain ("BNG") and it was unlikely that the statutory requirements would change prior to the end of the Examination. The ExA asked the Applicant to summarise the strategy taken towards the Outline Net Gain Strategy ("ONGS") (APP-251) and in particular the relationship between the baseline calculations provided in table 3 and the BNG calculations which are still to be detailed.	Ms Smith on behalf of the Applicant noted that as presented in paragraph 1.2.1.2 of the ONGS, the Applicant has proposed BNG opportunities at the onshore substation only, as this is where the permanent aboveground infrastructure is located. Along the onshore cable corridor, works are temporary and habitats will be reinstated once those works are complete. Ms Smith added that the Applicant is committed to reducing any new loss to biodiversity and this is demonstrated in the ONGS and commitment Co199. Ms Smith explained that the BNG opportunities concentrated at the substation include ecologically diverse landscape planting, the creation of a water attenuation feature and hedgerow creation and planting. In addition, other opportunities will be considered and adopted where possible and appropriate to do so. This includes opportunities to enhance not only habitats but also species, for example the installation of bat and bird boxes (noting that whilst BNG opportunities focus on habitats there are secondary benefits to species). Ms Smith confirmed that requirement 6 of the draft DCO secures the implementation of the BNG strategy. Ms Smith explained that the ONGS only included the pre-development baseline units as the detailed design of the onshore substation and EBI has not yet been undertaken so the final footprint and site arrangement is not yet known. Ms Smith added that the Applicant will continue the development and consideration of BNG opportunities post consent and pre-construction wherever possible along the onshore cable route. For example, opportunities that may be available as part of the replacement of hedgerows. Ms Smith

Item	ExA Question/Context for discussion	Applicant's Response
		explained that if there is the opportunity to capture what is re-instated for biodiversity net gain purposes that will equally be captured within that updated biodiversity net gain strategy submitted under requirement 6. The ExA noted that in its written representation, the EA had referred to the potential for offsite BNG provision. The ExA acknowledged that the Applicant did not have the post development calculations, nor the details of landowner agreements, but asked whether the ONGS should make some reference to the possibility of offsite provision of BNG. Ms Smith noted that for the purposes of the DCO application, the Applicant had focussed on areas within Order limits. Ms Smith added that the Applicant thanks the EA and the Yorkshire Wildlife Trust for advising on other offsite opportunities, which the Applicant has taken on board and will consider further. However, for the purposes of the DCO Application, Ms Smith reiterated that the focus was on onsite opportunities for BNG (i.e. within the Order limits).
7	The ExA noted that measures to implement BNG and enhancement measures seem to be listed as separate matters in the application documents. The ExA asked if this was correct and the enhancement measures were in addition to BNG measures. The ExA asked how it could be sure there was no double counting (of enhancement and BNG measures).	Ms Brodrick confirmed that the enhancement measures were in addition to the BNG measures. Ms Brodrick explained that the priority would be given to those measures that would deliver BNG. However, there are a number of other measures proposed that would deliver enhancement benefits but may not qualify as BNG, including some social measures such as information boards and improvements to footpaths. Ms Brodrick confirmed that there was an overlap in the measures described in the outline plans for BNG and enhancement, however, for the final plans, there would be a clear distinction between the measures being put forward and secured that would qualify as BNG. All other measures would then be enhancement measures. The Applicant would be able to make the distinction clearer at that point in time as it would have much more information about the nature and type of habitats that are being provided.
7	The ExA noted that in the most recent SoCG between the Applicant and ERYC submitted at deadline 3, the only three matters still to be agreed relate to mitigation and monitoring timescales and that the	Ms Brodrick explained that any measures set out in the landscape management plan approved pursuant to requirement 8 would be monitored and maintained in accordance with the details set out in approved landscape management plan. For landscaping that forms part of Work 7(f), the landscape maintenance and management plan referred to earlier in the hearing and approved under requirement

Item	ExA Question/Context for discussion	Applicant's Response
	Applicant had indicated it was awaiting a position from ERYC on this. The ExA asked the Applicant to explain the differences in monitoring between BNG and enhancement or mitigation measures.	9(3) would set out the maintenance and monitoring requirements. For any additional planting as part of BNG strategy, the detailed BNG strategy would set out any monitoring and maintenance requirements. Ms Brodrick referred to paragraphs 4.2.2.7 and 4.2.2.8 of the ONGS for further details. Ms Brodrick explained that the nature and length of the monitoring would depend on the feature involved. The Applicant was therefore unable to provide any specific details at this stage but the Applicant was mindful of the 30 year maintenance period referred to in the Environment Act 2021 and emerging policy. Ms Brodrick reiterated that any planting undertaken would be subject to a minimum of 5 years' maintenance for the project in accordance with requirement 9(2) and any further monitoring and maintenance beyond that would be agreed with ERYC as part of the discharge of the requirements. Ms Brodrick confirmed that this could potentially result in different monitoring and management timescales and approaches being applied to different measures if it was appropriate to do so.
Agenda item 8 – Onshore water environment		
8.1	The ExA asked the Applicant to provide an update on negotiations with the EA in relation to bridge crossings across watercourses and future proofing flood defences at Watton Beck.	Mr Watts confirmed that the Applicant had been in discussions with the EA. The parties had confirmed that no crossing would be taken over a main river without agreement from the EA. The Applicant will add a sentence to the next versions of the Outline Code of Construction Practice accordingly. In relation to Watton beck, Mr Watts confirmed that voluntary agreements were being discussed with the land team at the EA. The Applicant notes that Ms Griffiths confirmed that the EA did not have anything else to add and agreed with the summary provided by Mr Watts. The EA was hopeful that an update could be provided by deadline 4 in relation to Watton Beck.
8.1	The ExA noted that the EA had concerns around future proofing defence works and asked if the EA had a worst case scenario for the depth of piling operations that would need to be undertaken as part of that.	The Applicant notes that Mr Pattinson for the EA advised that there were a range of flood defence solutions at the Watton Beck location which may or may not involve piling. Mr Pattinson noted that the EA has done similar piling works in the vicinity so it has some idea of depth but further investigation was needed.

Item	ExA Question/Context for discussion	Applicant's Response
8.1	The ExA asked whether the EA was confident that negotiations on the topic could be concluded before the close of examination.	The Applicant notes that Mr Pattinson advised that the EA was confident a solution exists but was not sure of the timescales. Ms Griffiths commented that she was confident that an agreement could be reached before the close of the examination. Ms Brodrick agreed with the EA and noted that the Applicant was working with the EA to give it sufficient comfort in order to be able to reach an agreement.
8.1	The ExA asked the Applicant if it was confident that it could put cables in at Watton Beck at a sufficient depth to avoid any piling.	Ms Brodrick noted that this was one of the topics which was still under discussion. Ms Brodrick explained that it was the Applicant's preference for any flood defence works in this location to be carried out prior to the installation of the cables and that was the option currently being explored by the parties. However, Ms Brodrick confirmed that there would be sufficient depths at which the works could take place provided that certain protective measures were complied with. Ms Brodrick reiterated that these details were forming part of the discussions between the Applicant and the EA. The Applicant notes that Mr Pattinson provided an updated on the disapplication of the environmental permitting regulations and explained that the EA would submit some amendments to the protective provisions in Schedule 9 of the draft DCO.
N/A	The ExA reminded the Applicant that Mr and Mrs Taylor had submitted a representation at deadline 3 and asked the Applicant to confirm it would respond to that by deadline 4.	Mr Watts confirmed that the Applicant would do so and also that it already discussed a draft response with Mr and Mrs Taylors at a meeting with the Applicant that took place on 21 April 2022.
Agenda item 9 – Socio-economic and land use effects		
9.1	The ExA asked the Applicant to confirm that Natural England ("NE") had confirmed in its deadline 2 submissions that it would accept that soil sampling and other tactical measures could be secured under the Code of Construction Practice. The ExA noted that the risk and issues log submitted by NE at deadline 3 had changed the status of that point from green to amber but it was not clear why. NE seemed to indicate that further interaction with the Applicant was expected.	Mr Watts confirmed the Applicant was not aware of the reason for the change and the Applicant would confirm the position in writing at deadline 4. Mr Watts noted as a point of clarification that it was the soil management strategy and the storage of soil during construction which is set out in Appendix B of the OCoCP (REP1-027). Mr Watts added that in the Applicant's view the most pertinent matter in relation to the maintenance of the quality of the soils was how the soil was stored rather than a survey at the beginning or at the end of construction.

Item	ExA Question/Context for discussion	Applicant's Response
9.1	The ExA noted that the issue of best and most versatile ("BMV") soil features in the recent decisions from the Secretary of State in the decision for East Anglian One North and East Anglia Two. The ExA asked the Applicant for clarification as to how permanent BMV loss had been computed for Hornsea Project Four. The ExA understood that the calculation was based on less than 20 ha being permanently lost or downgraded and that this is primarily at the substation.	Mr Watts confirmed this was correct and that works relating to the EBI were also accounted for in the calculation. The permanent loss of BMV soil largely arises from works relating to the onshore substation, EBI, landscape planting and permanent access road (including the diversion of the PRoW).
9.1	The ExA asked what calculations had taken place for link boxes, transition joint bases and other such infrastructure. The ExA added that the question was whether it was just the area of the manhole cover or the area also around that which could result in a loss of BMV.	Mr Watts confirmed that the Applicant had not included the area of each manhole cover for each potential link box within the calculations for permanent BMV loss as these are so sporadic in nature that they are not considered to have a material impact on loss of BMV soils due to fragmentation. Mr Watts confirmed that the Applicant would provide a figure for deadline 4.
9.1	The ExA asked the Applicant to confirm by deadline 4 what evidence is available from past projects to show whether any land of a 3a rating may be downgraded to 3b and what proportion of the cable corridor may be affected. The ExA also noted that it would like to know what evidence was available on the quantum of degradation of 3a land to 3b if typical construction management practices were followed noting that the Applicant's case so far is that all of the cable corridor is land classified as grade 3a or better. The ExA asked whether there was a risk that this land could be reduced to a classification of grade 3b.	Mr Watts noted that there is no information available currently to distinguish between land classified as grade 3a land and land classified as grade 3b land within the onshore cable corridor. The Applicant had therefore assumed all such land was grade 3a as the worse case scenario for the purposes of the assessment. Mr Watts added that the Applicant does not have information available on the likelihood of the classification being downgraded from grade 3a to grade 3b post construction. However, Mr Watts added that the measures set out in the soil management strategy should retain the fundamental properties of the soil such that a downgrade would not be applied to the soil as a result of construction activities. Mr Watts noted that the action point was clear but that the Applicant could not be sure that such information would be available from previous projects. However, Mr Watts noted that it may be possible for the Applicant to provide some testimonials from landowners or tenants where agricultural processes have continued post construction.
Agenda item 10 – Action points arising from the hearing		

Item	ExA Question/Context for discussion	Applicant's Response
10		To be published after the hearing.
Agenda item 11 – Any other business		
11		Written summaries of oral submissions to be produced by deadline 4.
The ExA adjourned the hearing at 12:20.		

Table 2 : Action Points

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
1	Applicant to review the use of industry standard colour references or other mechanism to provide certainty over the proposed colours.	Applicant	D4	The Applicant has updated the Outline Design Plan to include indicative colour numbers. This has been submitted at Deadline 4.
2	Applicant to provide some further examples of more industrial type buildings such as Hornsea 2 where adaptive banding has been used.	Applicant	D4	The Applicant has undertaken a review of similar examples of colour application on industrial buildings. *Hornsea Project One* 

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				Various Warehouses – Magna Park A number of warehouses operated by companies including Amazon and John Lewis can be found by use of search engine (and in the below linked article for the Morrisons Distribution Centre). The buildings utilise a blue graded banding.  *Morrisons Distribution Centre, Bridgewater* A Guardian article at the following address includes the below photographs of a distribution centre using adaptive panelling in various colours including green - *https://www.theguardian.com/artanddesign/2018/apr/15/shed-the-size-of-town-what-britains-giant-distribution-centres-tell-us-about-modern-life*

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				 

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				GPark Wixams, Bedford The office area can also be identified on the building elevations using 200mm deep flat panel cladding. Light coloured cladding is used at high levels to minimise visual impact which helps to assimilate the buildings into the skyline. The proposed blue cladding to the elevations and the way it is then gradated seeks to minimise visual impact. *Encirc Glass, Elton, Merseyside* The visual appearance of the largest structure within the development will be clad using profiled composite cladding panels, which will be graduated in colour to produce a banding effect the minimise the contrast of the building against its backdrop. The warehouse building is the largest structure on the site. It is 180m wide by 292m long and 35m high. It has a low pitch roof but appears essentially flat as it is screened by a parapet. The building is clad in insulated profiled metal wall cladding coloured in a graduated green to white-grey pattern. A plan on the development's planning page shows the theory and application of the panelling for the Encirc Glass Site, utilising nearby colours to grade the colours in differing increments. More information and the below image - [redacted])

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				
3	To provide a response or signpost where it can be found if already submitted to ExQ1 question DGN.1.4 [PD-006].	ERYC	D4	
4	To respond as to whether they consider that the Proposed Development would benefit from a design review process.	ERYC	D4	
5	If ERYC consider that the Proposed Development would benefit from a Design Review the Examining Authority (ExA) to provide further detail as to what is meant by this.	ExA	D5	
6	To review whether additional visualisations can be provided showing High Voltage	Applicant	D4	The LVIA is based on a Maximum Design Scenario (MDS) that covers both HVAC and HVDC options. Block visualisations were prepared to illustrate this MDS. These block visualisations

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
	Alternating Current (HVAC) and High Voltage Direct Current (HVDC) scenarios, written response to be provided at D4 but acknowledge that visualisation if to be provided may need to be submitted at later date.			represent the worst case in terms of visual obstruction and serve as a primary reference for the LVIA. The 'illustrative visualisations', also referred to as 'photomontages' in the LVIA, were prepared to show an illustrative 3D model of the proposed Hornsea Four OnSS and EBI. The illustrative 3D model was not designed to illustrate 'worst case', but to show a more realistic illustration of the potential appearance of the OnSS and EBI. These photomontages serve as a secondary reference for the LVIA. Two alternative illustrative 3D models of the proposed Hornsea Four OnSS were prepared: a HVAC option and a HVDC option. Both of these 3D models are shown in Figures 2 and 3 in **F2.13 Outline Design Plan (APP-248)**. As noted above, neither model is designed to illustrate 'worst case' as set out in the MDS. It was judged that the larger, bulkier buildings of the HVDC option would be more visually intrusive, when modelled into a photomontage, than the smaller buildings of the HVAC option. The HVDC option was therefore selected for inclusion in the photomontages. For completeness, additional photomontages showing the HVAC option, from viewpoints 1-4, will be prepared and submitted at Deadline 5.
7	The Applicant's Design Vision Statement [APP-048] includes Figures 5 and 6 on page 017 which depict indicative site layouts for HVDC and HVAC options. Amend the document so that these figures are correctly labelled.	Applicant	Next time documents is updated	N/A
8	To check Viewpoint 6 in the context of the wind turbine at Poplar Farm.	Applicant	D4	The Applicant has checked the set-up of the block visualisation from Viewpoint 6 and found it to be incorrect. The 3d model has the correct dimensions and finished ground level. However, it appears that manual errors were made during the exporting process, whereby the view of the 3d model is overlaid on to the baseline photograph (although appearing to match with the model topography, it was slightly too low). Through correcting these errors, it was found that the 30m lighting protection zone should be seen at approximately the same height as the nacelle of the wind turbine at Poplar Farm.

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				The Applicant can confirm that an audit of all other photomontages and wirelines provided has been undertaken an no other abnormalities or errors have been found. As such, an update to the block model for Viewpoint 6 has been provided in **Appendix C** of this document.
9	Drafting of Requirement 12 to be reviewed in relation to securing fencing.	Applicant	D4	Requirement 12 has been updated in the draft DCO and submitted at Deadline 4.
10	To provide a written response on outstanding concerns regarding photomontages in the Statement of Common Ground once reviewed the response to action point 8.	ERYC	D5	
11	Update on timescales regarding the potential designation of the Yorkshire Wolds as an Area of Outstanding Natural Beauty.	Environment Agency/Natural England	D4	
12	Confirm whether now satisfied that the amended wording proposed to the draft Development Consent Order submitted at Deadline 3 [REP3-006] and amendments to the outline Landscape Management Plan [REP3-009] would secure the retention, management and maintenance of the landscaping scheme for the lifetime of project?	ERYC	DL4	
13 [18]	Review the wording of Requirement 9 as submitted at D3.	ERYC	D4	
14 [19]	Resubmit Table 2 of the Traffic and Transport Technical Report [APP-125] with correct figures for month 6 onwards.	Applicant	D4	Table 2 of **A6.7.1: Traffic and Transport Technical Report (APP-125)** presents a 'snapshot' summary of Appendix E of **A6.7.1: Traffic and Transport Technical Report (APP-125)** which details the forecasts quantity of materials, that could be expected for all onshore construction, and for each of the major construction activities.

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				The Applicant notes that the summation of total traffic movements from individual activities presented in Table 2 do not correctly sum for months 6 – 12. The Applicant has provided an amended Table 2 in **Appendix B** of this document, with the incorrect numbers in red and struck through, with the correct numbers provided alongside. The Applicant would reiterate that as outlined within paragraph 3.2.1.6 of **A6.7.1: Traffic and Transport Technical Report (APP-125)**; the Maximum Design Scenario (MDS) has been derived by examining the potential for individual construction activities to move relative to each other (selecting orange highlighted cells in Table 2). It is noted that the values in these cells are unchanged and therefore the assessment MDS remains unchanged
15 [20]	To provide further details on traffic movements throughout the day in and around the proposed Primary Logistics Compound (PLC) at Lockington.	Applicant	D4	Section 4.10.1 of **A1.4: Project Description (REP1-004)** details a total of eight temporary logistics compounds (one primary and seven secondary compounds) and sets out a hierarchy and associated operational principals. These operational principals have informed the derivation of traffic demand detailed in **A6.7.1: Traffic and Transport Technical Report (APP-125)**. The key operational principals that have informed traffic derivation are: • Logistics compounds will be required along the Hornsea Four onshore Export Cable Corridor (ECC), for laydown and storage of materials, plant and staff, as well as providing space for small temporary offices, welfare facilities, security and parking. • Logistics compounds may also operate as support bases for the onshore construction works as the cable work fronts pass through an area. They may house portable offices, welfare facilities, localised stores, as well as acting as staging posts for localised secure storage for equipment and component deliveries. It is the intention that staff movements would be contained within each temporary logistics compound, facilitated by offices and welfare facilities. Any storage of materials would be localised and would be predominantly high value items. As set out in Section 3.3.3 of **A6.7.1: Traffic and Transport Technical Report (APP-125)**, the assignment of construction employees is based upon their access point origin/destination. A maximum derived demand of 54 construction employees per access point is assigned to all 35

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				access points during the same period to inform the Maximum Design Scenario (MDS) as set out in Table 7.13 of **A3.7: Traffic and Transport (APP-031)**. The MDS includes a 10% contingency for 'incidental' vehicle movements between work fronts and makes no reduction in traffic for car sharing or private transport options (e.g. mini-buses). Appendix J of **A6.7.1: Traffic and Transport Technical Report (APP-125)** forecasts that there could be a peak of 108 two-way daily employee vehicle (light vehicle) movements to the Primary Logistics Compound Access (AP_015). The MDS distributes employee arrivals and departures within a single am and pm peak hour to determine the maximum driver delay impacts. Adopting this MDS, it is calculated that there could be a peak of up to 54 light vehicles arrivals in the morning and 54 departures in the evening. However, it is considered more realistic that the 108 two-way movements would be spread throughout the working day reflecting the nature of the different project roles. For example, administration staff may arrive and depart during 'normal' working hours, whilst site supervisors may travel to the logistics compounds for meetings before leaving to supervise works elsewhere on the project, incidentals could happen throughout the day. Section 3.3.3 of **A6.7.1: Traffic and Transport Technical Report (APP-125)** sets out the adopted approach to forecasting employee movements on the highway network based on Census data to identify the journey origin and calculated distance/time to inform likely routes to access point destination. **G1.9: Applicant's comments on Relevant Representations (REP1-038)** confirms it is forecast that the majority of the 108 two -way light vehicle movements would travel via the most expeditious route (i.e. the A164) thus avoiding the need to travel through Lockington Village to access the Primary Logistics Compound. The only exception to this would be if a journey origin was within Lockington Parish or immediate locality. Similar to employees, the majority of materials and plant would be delivered direct to the work area and would not first be assigned to the logistics compounds. The exception to this would be the aforementioned high value items such as cable drums; these items would be delivered direct to the logistics compounds from the origin and then transported onwards to the respective work front.

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				The nature of construction works would dictate that deliveries are scheduled to occur throughout the day to allow deliveries to be efficiently unloaded and processed. Appendix G of **A6.7.1: Traffic and Transport Technical Report (APP-125)** highlights that there could be a peak of 67 two-way daily HGV movements to AP_015 (the Primary Logistics Compound Access). Adopting an even distribution throughout a typical weekday it can be calculated that there would be a peak of approximately six two-way HGV movements per hour, i.e. three arrivals and three departures. Section 3.3.2 of **A6.7.1: Traffic and Transport Technical Report (APP-125)** sets out the adopted approach to forecasting HGV movements on the highway network based on the assignment protocols agreed with East Ridings of Yorkshire and Hull City Council highway authorities. Using these protocols, it is forecast that the majority of HGVs accessing the Primary Logistics compound will approach from the south on the A164, before entering Station Road (west). No HGVs will be permitted to travel through Lockington Village. In accordance with the Applicant's Commitment Co144, an outline Construction Traffic Management Plan (oCTMP) was submitted in support of the DCO Application (as Appendix F of **F2.2: Outline Code of Construction Practice (APP-237)** and amended at Deadline 1 **(REP1-027)**. The oCTMP sets out the basis for the control of employee and HGV traffic movements by which a finalised CTMP must accord prior to commencement of construction, secured by DCO Requirement 18. The CTMP will set standards and procedures for: • Managing the numbers and routing of HGVs during the construction phase; • Managing the movement of employee traffic during the construction phase; • Details of localised road improvements necessary to facilitate safe use of the existing road network; and • Details of measures to manage the safe passage of HGV traffic. The CTMP will secure the prohibition of HGV construction traffic through Lockington Village and manage the construction traffic movements to not exceed the levels assessed in **A3.7: Traffic and Transport (APP-031)**.

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
16 [21]	Provide a plan showing the widths of Station Road East and West at approximately 75 metres in from the respective junction with A164, i.e. at the approximate distance where the access to the PLC would be taken.	Applicant	D4	The Applicant has been requested to provide a plan showing the width of Station Road East and West at approximately 75.9 meters in from the respective junction with the A164, i.e. at the approximate distance where the access to the Primary Logistics Compound would be taken. Please see document **G4.12 Plan Showing Widths of Station Road East and West**, submitted at Deadline 4. **A3.7 Traffic and Transport (APP-031)** identifies that link 43 (Station Road west of the A164) is not wide enough to accommodate two-way HGV traffic and proposed mitigation measures are set out in Table 7.21 of **A3.7: Traffic and Transport (APP-031)**. Proposed mitigation measures include the widening of the existing junction of link 43 with the A164 and widening along link 43 to access AP_015 to allow two HGVs to pass. It is noted that the final measures will be agreed with the East Riding of Yorkshire Council through the development of the CTMP prior to commencement of the relevant works.
17 [22]	Confirm current length of Skidby Footpath 16 that would need to be diverted, i.e. from Points 25c to 25d on the Public Rights of Way Plan [APP-215] and the best and worst case lengths of diversion that would be needed.	Applicant	D4	The Applicant can confirm the following diversion lengths: • Existing Skidby Footpath No. 16 (25c to 25d on PRoW Plans (**APP-215**) – 223 m. • Maximum diversion as set out in the draft DCO (25c to 24d on PRoW Plans (**APP-215**), connection to the wider PRoW network at the closest point – 602 m. • 25c to Woodmansey Footpath no. 7 – 1,092 m. • 25c to 25c via the longest diversion and past Woodmansey Footpath No. 7 (noting that this is a lock out on the PRoW network) – 1,175 m. • 25c to 25d via the shortest diversion, running adjacent to the permanent works area and the northern site boundary if space if available during detailed design – 577 m.
18 [23]	Confirm that the proposed protection arrangements for the Beverley Sanctuary Limit Stone during the construction stage of the Proposed Development as set out in the Applicant's Written Scheme of Investigation for Onshore Archaeology [REP3-011 and 012] would be effective and are reasonable.	Historic England/ ERYC	D4	

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
19 [24]	To advise whether it is satisfied with the Applicant's approach regarding Biodiversity Net Gain provision.	ERYC	D4	
20 [25]	Outline Code of Construction Practice (CoCP)[REP1-027] to be amended to include a commitment that there would be no bridge crossings over main rivers without the prior agreement of the EA.	Applicant	D4	The Applicant has updated the Outline Code of Construction Practice. This has been submitted at Deadline 4.
21 [26]	Update on discussions regarding impacts on Watton Beck and confirmation regarding likely timescales for reaching agreement on this matter.	Applicant/EA	D4	Please see document **E1.2.1 E1.2, Annex 1: Statement of Reasons: Update on negotiations with landowners, occupiers, Statutory Undertakers and other utilities**, submitted at Deadline 4.
22 [27]	Respond to respond to Mr and Mrs Taylor's D3 comments [REP3-059].	Applicant	D4	The Applicant has prepared a signposting document and submitted at Deadline 4 (**G4.8**).
23 [28]	NE to confirm if it is now content to accept that soil sampling and other tactical measures would be secured under the CoCP [REP1-027] to establish soil quality after reinstatement; Applicant to liaise with NE to clarify why its issue log remains amber on this point.	Applicant/ Natural England	D4	The Applicant will liaise with Natural England and provide an update for Deadline 5.
24 [29]	Submit schedule/ plan of the breakdown of the computation of permanent loss or downgrading for more than five years of Best and Most Versatile land for the Proposed Development.	Applicant	D4	The Applicant within **A1.4: Project Description (REP1-004)** has set out the maximum design parameters for the Proposed Development's link boxes (associated with which may be inspection chambers or manhole covers) and their supporting surface concrete surrounds. The Applicant can confirm that the maximum area taken at surface level for the link boxes will be 2,160 m2 (0.534 acres, 0.216 hectares (ha). This would be the maximum area rendered unusable for agriculture as a result of link boxes, with the remaining infrastructure extending below ground. The unusable area is calculated as follows:

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				• Link Box length: 3 m • Link Box width: 3 m • Maximum number of Link Boxes: 240 • Total: 2,160 m2 The Applicant, within their voluntary agreements, has committed to liaising with landowners, occupiers and their representatives regarding the location and grouping of the link boxes. **A3.6 Land Use and Agriculture (APP-030)** presents an assessment of permanent agricultural land loss as a result of Hornsea Four. As set out in paragraph 6.11.1.13 of the chapter, impacts associated with link boxes were acknowledged as part of the impact assessment. It is noted that the total area associated with link boxes was not included within the identified 18.9 ha of permanently impacted Best Most Versatile (BMV) land, due to the fragmented nature of impacts associated with sporadic 3x3m link boxes spread throughout the 39 km onshore Export Cable Corridor (ECC). However, when combined with the additional 0.216 ha, the maximum area of agricultural land rendered unusable for agriculture would remain under 20 ha and would therefore not alter the assessment as presented. The Applicant therefore concludes that there will be no material effect on BMV land as a result of the link boxes in combination with other identified permanent above ground infrastructure required for the Proposed Development.
25 [30]	Explore and submit evidence from past analogous projects of the proportion of land reinstatement that is likely to have soil quality downgraded from Grade 3A to 3B on reinstatement after construction, given good construction management practices.	Applicant	D4	As far as the Applicant is aware, there have been no instances on past analogous projects, including the significant number that the Applicant has constructed, where land has been regraded in accordance with the Agricultural Land Classification (ALC) data held by Natural England. To avoid the potential regrading of soil under ALC, in Appendix B of **F2.2:Outline Code of Construction Practice (CoCP) (APP-237)** the Applicant sets out the Outline Soil Management Strategy, building on recognised best practice guidance provided in the Department for Environment, Food and Rural Affairs (Defra) Code for the Sustainable Use of Soils on Construction Sites (Defra 2009) and the Ministry of Agriculture, Fisheries and Food (MAFF) Soil Handling Guide (MAFF 2000), the principal objectives of which are to:

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				• Conserve soil resources; • Avoid damage to soil structure; • Maintain soil drainage during construction; and • Identify principles for the reinstatement of the soil profile following construction. The Applicant has taken regard to the Ministry of Agriculture, Fisheries and Food (MAFF) publication "Revised guidelines and criteria for grading the quality of agricultural land" and is confident that the proposed Outline Soil Management Strategy will negate any regrading. However, the Applicant notes the five assumptions used when classifications are made: 1. Land is graded according to the degree to which physical or chemical properties impose long-term limitations on agricultural use. It is assessed on its capability at a good but not outstanding standard of management. 2. Where limitations can be reduced or removed by normal management operations or improvements, for example cultivations or the installation of an appropriate underdrainage system, the land is graded according to the severity of the remaining limitations. Where an adequate supply of irrigation water is available this may be taken into account when grading the land. Chemical problems which cannot be rectified, such as high levels of toxic elements or extreme subsoil acidity, are also taken into account. 3. Where long-term limitations outside the control of the farmer or grower will be removed or reduced in the near future through the implementation of a major improvement scheme, such as new arterial drainage or sea defence improvements, the land is classified as if the improvements have already been carried out. Where no such scheme is proposed, or there is uncertainty about implementation, the limitations will be taken into account. Where limitations of uncertain but potentially long-term duration occur, such as subsoil compaction or gas-induced anaerobism, the grading will take account of the severity at the time of survey.

Action	Description	Action by	Deadline	Applicant's Comment/where has the action been answered.
				4. The grading does not necessarily reflect the current economic value of land, land use, range of crops, suitability for specific crops or level of yield. For reasons given in the preface, the grade cut-offs are not specified on the basis of crop yields as these can be misleading, although in some cases crop growth may give an indication of the relative severity of a limitation. 5. The size, structure and location of farms, the standard of fixed equipment and the accessibility of land do not affect grading, although they may influence land use decisions. The MAFF classification is based on a range of physical and chemical properties including climate, site and soil. It is noted that any classification based on climate and site location would not be altered as a result of the Proposed Development. The Applicant is aware that the soil, including texture, structure, depth, stoniness and chemical limitations could be impacted by the Proposed Development and this is factored into the Outline Soil Management Strategy. For the reasons set out above, the Applicant is confident that, given the measures to be put in place including the Outline Soil Management Strategy and through commitments made in the voluntary agreements, it is unlikely that soil quality will be downgraded on reinstatement after construction.

Appendix A HVAC vs HVDC

Comparison of HVAC & HVDC onshore infrastructure

The following table was submitted in partial response to Examination Question PDS.1.1 and has been updated at Deadline 4 to account for a typographical error for the HVAC main building height.

Comparison of HVAC & HVDC onshore infrastructure.

Parameter	From Project description	Split between HVAC and HVDC	
	Maximum design parameters	HVAC	HVDC
HVAC - number of cable circuits	6	6	
HVAC - number of cables	18	18 (6 trenches)	
HVDC – number of circuits	4		4
HVDC – number of cables	8		8 (4 trenches)
HVDC cable - Voltage (kV)	600		600
HVDC cable – Current using 300kV cable (kA)	2.59		2.59
HVAC cable – Voltage (kV)	400	400	
HVAC cable – current using 220kV cable (kA)	1.62	1.62	
Corridor width: temporary and permanent (m) *	80	80	60
Corridor area – permanent (m^2)	2,340,000	2,340,000	1,560,000
Corridor area – temporary and permanent (m^2)	3,120,000	3,120,000	2,340,000
Permanent area of site for all infrastructure, including landscaping and attenuation (m^2)	164,000 (including 34,000 and4,000)	164,000 (including 34,000 and4,000)	164,000 (including 34,000 and4,000)
Temporary works area (m^2)	130,000	130,000	130,000
Maximum main building height (m)	25	20	25
Height of fire walls (m)	25	20	25
Main building - lightning protection and gantry, height (m)	30	25	30
Viewing platform height [for construction] (m)	30	30	30

Parameter	From Project description	Split between HVAC and HVDC	
	Maximum design parameters	HVAC	HVDC
Duration of construction (months)	43	43	43
Maximum number of main buildings	2	2	2
Maximum length of main building (m) (if single building / if multiple buildings) *	240 / if multiple buildings then proportionately smaller	240 / if multiple buildings then proportionately smaller	240 / if multiple buildings then proportionately smaller
Maximum width of main building (m) (if single building / if multiple buildings) *	80 / if multiple buildings then proportionately smaller	80 / if multiple buildings then proportionately smaller	80 / if multiple buildings then proportionately smaller
Maximum number of secondary buildings	15	15	9
Maximum height of secondary buildings (m)	15	15	15
Maximum area of secondary buildings (m^2)	7,000	7,000	7,000
Maximum number of HV equipment clusters and components	45	45	9
Maximum height of HV equipment clusters and components (m) (can be either open or closed design)	15	15	15

* The length of multiple buildings would not be longer than 120m

Appendix B Updated Table 2: Daily HGV material movements per month

Activity	Months												
	0	1	2	3	4	5	6	7	8	9	10	11	12
1. Primary Logistics Compound	26	26											
2. Secondary Logistics Compound	37	37	37	37									
3. Landfall Compound		31	31										
4. Haul road			76	76	76	76	76						
5. Backfill material			26	26	26	26	26	26					
6. Tape / Tile			0.1	0.1	0.1	0.1	0.1	0.1					
7. Ducts			4	4	4	4	4	4					
8. Cables								4	4	4	4	4	4
9. HDD installation				31	31	31	31	31	31	31	31	31	31
10. Drainage ducts			1	1	1	1	1						
11. Joint bays								5	5				
12. Temporary access roads	22	22	22										
13. OnSS (including OnSS access road)	34	37	37	15	15	100	100	100	100	100	25	25	25
Total monthly daily HGV movements	**119**	**153**	**234**	**190**	**153**	**238**	**~~170~~ 238**	**~~139~~ 170**	**~~134~~ 139**	**~~56~~ 135**	**~~56~~ 60**	**~~56~~ 60**	**~~64~~ 60**
Total month daily HGV movements + 10% contingency	**131**	**168**	**258**	**209**	**168**	**262**	**262**	**187**	**153**	**148**	**65**	**65**	**65**
Total monthly daily two-way HGV movements	**262**	**337**	**515**	**418**	**336**	**523**	**523**	**374**	**307**	**296**	**131**	**131**	**~~142~~ 131**

Key

	Months where traffic flows occur for discrete construction activities
	Peak traffic flows per activity
	Peak monthly HGV movements

Appendix C Updated Viewpoint 6 Photomontage

Figure: 14
Viewpoint 6: Fishpond Wood, Risby Hall

EBI and Substation Area (15m Height) | EBI Buildings (20m Height) | Substation Buildings (25m Height) | Lightning Protection (30m Height)

OS reference:	501454 E 435403 N	Horizontal field of view:	90° (cylindrical projection)	Camera:	Nikon D600
AOD:	45 m	Principal distance:	522 mm	Lens:	AF 50mm f/1.8D
Direction of view:	95°	Paper size:	841 x 297 mm (half A1)	Camera height:	1.5 m AGL
Distance to site:	2.02 km	Correct printed image size:	820 x 260 mm	Date and time:	04/04/2019 13:00