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| 2.17.36 | NE29a<br><br>Protected Landscapes | Comment: Natural England advises that the ES does not include a full justification as to why the project cannot avoid the Lincolnshire Wolds National Landscape.<br><br>Recommendation<br><br>• A full justification behind the need to directly impact the National Landscape should be provided, inclusive of why route Option B1 is the only valid alternative route that directly avoids the National Landscape, and why Option B2A is the preferred route given that this option cuts through the National Landscape directly—with open trenching—and abuts it for around 3km along the A18 boundary (AS-020). | Many potential constraints were considered when developing the route of the Proposed Development, however there were six key considerations, which were:<br><br>• The safety of local communities<br>• Built up areas or sensitive buildings such as schools<br>• Areas protected for their habitats and species<br>• The Lincolnshire Wolds Area of Outstanding Natural Beauty (now the Lincolnshire Wolds National Landscape (LWNL))<br>• Areas that are vulnerable to flooding, and<br>• Historic monuments<br>Of these, routeing away from local communities and built up areas were the primary considerations for both amenity and safety reasons.<br><br>Consideration was given to the potential to connect emitters north of Immingham to the LOGGS pipeline at Theddlethorpe via a marine pipeline. There were many challenges identified relating to this option, and it was considered highly unlikely to be feasible or to gain consent.<br><br>To route south from Immingham**,** it is necessary to cross either east or west of Laceby.<br><br>As built development extends up to the eastern edge of the A46/A18 roundabout and the LWNL extends up to the A18, crossing to the west of Laceby means it is inevitable that the route would be in the LWNL. To avoid the LWNL on a westerly route it would be necessary to route around the entire NL before routeing back up north to Theddlethorpe.<br><br>Crossing to the east of Laceby would avoid the LWNL, however it would mean the pipeline would have to cross somewhere between the village of Laceby and the large conurbation of Grimsby and Cleethorpes. This area is highly constrained by existing and proposed development. In addition to the populated areas on the outskirts of Grimsby, North East Lincolnshire Council has allocated a large area west of Wybers Wood and Laceby Acres for future housing development (North East Lincolnshire Council Local Plan 2013 to 2032 (adopted in 2018)). This area (reference HOU342 Grimsby) is estimated to deliver 2,593 housing units by 2032. In addition, there are four smaller housing allocations around the edge of Laceby. The existing residential communities, in addition to this considerable extension to the western side of Grimsby means the pipeline route options are highly constrained in this area. The Hornsea 2 electrical cables pass through this same area and for technical reasons it would not be possible to run the pipeline in parallel with this cable for more than a short distance .<br><br>It is not just the gap between Laceby and Grimsby that presents a challenge in this location, it is also the routes from this point to the north and south. To the north there is an extant planning permission for a large solar development, and bands of mature trees including Priority Habitat deciduous woodland and ‘open space and woodland’ as defined on the North East Lincolnshire Local Plan policy maps. To the south there are several routeing challenges which include the need to cross Laceby Beck (possibly twice), and several existing and planned solar developments. A path through this area would likely be circuitous and would likely result in the pipeline passing close to existing, , and proposed residential areas on the outskirts of |

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| | | | Waltham and Barnoldby le Beck, directly contravening the primary routeing criteria for the project.<br><br>In summary, following the key routeing criteria, there is no viable route from Immingham to Barnoldby le Beck/Waltham area that can avoid the LWNL.<br><br>For this reason, coupled with the fact that the development is a buried pipeline above which land would be returned to its previous condition and use, the decision was taken to route a short section of the pipeline in the LWNL, but to exit the area as soon as reasonably practicable to do so.<br><br>From the point where the pipeline exits the LWNL the route is again dictated to a large extent by the presence of larger centres of population including Waltham and Holton le Clay, which is why the route remains adjacent to the A18 for several kilometres. |
| 2.17.37 | NE29b<br><br>Protected Landscapes | Comment Natural England do not consider that a full assessment of the impacts on special qualities has been provided, and therefore cannot agree with the conclusion that potential landscape effects on the Lincolnshire Wolds National Landscape are not significant for the purposes of EIA (minor adverse effects during construction reducing to negligible adverse during operation, paragraph 7.12.1, APP-049).<br><br>Recommendations:<br><br>• Assess impacts to all relevant special qualities, including chalk streams. | The Applicant has prepared a technical note to look at the other special qualities of the LWNL and shared a draft with Natural England. Following a call on 21 May this technical note has been updated and issued at Deadline 3 [. A copy has also been provided directly to Natural England.<br><br>• The Technical Note submitted at deadline 3 [**REP3-025**] includes a table listing all the special qualities of the National Landscape and confirms whether each of the special qualities is affected by the Proposed Development. As a result of further discussions with Natural England this has now been updated to include both special qualities present with the LWNL and within its setting.<br>• Although chalk streams are a special quality of the National Landscape, the Proposed Development does not cross any chalk streams within the National Landscape. The route of the pipeline does cross several chalk streams that are outside of the National Landscape. Those considered to potentially be within the setting of the LWNL are Laceby Beck and Waithe Beck. As with all other chalk streams these are proposed to be crossed using trenchless techniques.<br>• Laceby Beck is proposed to be crossed under using an auger bore. This would pose little risk of direct or indirect impacts on the chalk stream as it would cross beneath the beck at a depth of no less than 2 m. It would be necessary for a small number of construction vehicles and plant to cross Laceby Beck to construct a short (<300m) section of the pipeline route; however, the crossing would be via a Bailey Bridge, meaning there would be no direct impact upon the banks or channel of the beck. There is no operational risk to Laceby Beck.<br>• Waithe Beck would be crossed using either an auger bore or an HDD technique. The access track for plant and vehicles would again cross the beck via a Bailey bridge which is proposed to be located on a section where there would be the least impact on mature trees.<br>• Both the Laceby Beck and Waithe Beck crossing points are downstream of the National Landscape, meaning that in the highly unlikely event of any pollution of the becks, this would not impact on sections within the National Landscape. |

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| | | | • The only additional risk to Waithe Beck would be bentonite break out during construction, should the HDD technique be used. The works would be undertaken in strict compliance with best practice and following the requirements of a bentonite breakout plan which would include measures to both avoid the risk of breakout, and to limit the effects of breakout, in the unlikely event of such an event occurring. |
| | | • Distinguish between effects on defined special qualities grouped under the heading “landscape character”. | • Potential effects on defined special qualities under the heading “landscape character” are set out separately in the technical note provided at Deadline 3. |
| | | • We recommend that the effects of the proposed scheme on the special qualities of the Lincolnshire Wolds National Landscape are provided in table format. | • Potential effects of the proposed scheme on the special qualities of the Lincolnshire Wolds National Landscape are now provided in table format in the Technical Note provided at deadline 3. |
| 2.17.38 | NE29c<br>Protected Landscapes | Comment Natural England cannot agree with the conclusion to the assessment of impacts to special qualities provided, which is that “the affected section of the AONB would be small in extent and any impacts would be of short duration and reversible” (paragraph 7.8.82, APP-049).<br>Recommendation: | The Applicant has reviewed this further detailed advice and prepared a supplementary note that will be shared with Natural England. A meeting has been arranged for 21 May to discuss the supplementary note, a copy of which the Applicant intends to issue at Deadline 3. |
| | | • Remove reliance in the assessment on the mitigating effect of geographic extent on the assessed harm to the special qualities. | • The use of the geographical extent of effects on the landscape character special qualities has been challenged in reference to the findings of the Examining Authority’s Report of Findings and Conclusions for the Navitus Bay Wind Farm. The pertinent section of this report was cited:<br>○ Para 7.3.134 which states that “*The Panel disagrees with the applicant's approach for these reasons. Firstly, judgements of whether a project would compromise the special qualities of the designation cannot be bound by the sort of quantitative exercise deployed. Second, the Dorset AONB Management Plan confirmed that the AONB is a collection of fine landscapes "each with its own characteristics and sense of place."; in other words recognising that individual parts can as much reflect the qualities meriting the designation, as the Dorset AONB as a whole*.”<br>• The Guidelines for Landscape and Visual Impact Assessment (GLVIA3) rely on geographical extent of change as one of the determinants of magnitude/nature of effect and on that basis our approach to assessment of effects on the LWNL considers it as a relevant aspect. It is not clear to the Applicant what the ExA’s reasoning is for the first point as it is a statement not an explanation. Regarding the second point, whereas the Dorset AONB Management Plan sets out that the AONB is a collection of fine landscapes, no similar statement has been identified in the Lincolnshire Wolds AONB Management plan. Our assessment accepts that all of the LWNL is high value and that includes the section impacted by the Viking CCS pipeline.<br>• Section 7.3.135 of the report also highlights that:<br>○ *Finally, the approach fails to recognise that the special and outstanding landscape qualities of this AONB are particularly well expressed on its coastal edge, and in some instances can only be experienced on the coast. The description in the Management Plan captures it in the following terms: "Nowhere* |

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| | | | *is the contrast and diversity of this rich assemblage of landscapes more graphically illustrated than in the Isle of Purbeck. Here, many of the characteristic landscapes of the Dorset AONB are represented on a miniature scale to create scenery of spectacular beauty and contrasts, which mirrors that of the whole AONB."*<br>• This final point is not relevant to the LWNL.<br>• As such, taking the importance of the application of GLVIA3 methodology into account, it is not clear why the reasoning used for dismissing the use of geographical extent that was applied to the Navitus Bay Wind Farm should be applied to the Viking CCS Pipeline.<br>• For Navitus Bay the ExA stated that it "*agrees with NE insofar as the special qualities of a designated landscape derive from the physical and sensory characteristics of elements lying within or adjacent to it. The manner in which a development interacts with the key characteristics of the individual receptors provides the building blocks for coming to conclusions about impacts on the AONB or NFNP as a whole"*. Our conclusions on magnitude of effect are based on the manner in which the pipeline interacts with the key characteristics and underpin the assessment. Our assessment is that the short length of route within the National Landscape means there are fewer interactions with individual receptors. This is both in terms of type of receptor (only three of the 23 special qualities are present in the area) and number of receptors (for example only five 10m sections of hedgerow, one roadside verge and one scheduled monument would be affected within the National Landscape). The duration of construction effects is a factor in magnitude of effect, as set out in GLVIA3, and in operation the conclusions on magnitude reflect the fact that the pipeline is buried and few elements of value are impacted or lost and those that are, the hedgerows, will be reinstated such that in a relatively short period of time there is no readily identifiable physical change to the LWNL. |
| | | • Provide details on which elements of the project have been assessed as being situated within the setting of the Lincolnshire Wolds National Landscape | Elements of the proposals considered to be within the setting of the LWNL, and assessed as such, include:<br>• The central compound<br>• Access points 12AA and 13AA off the A18.<br>• The launch pit for the A46 crossing.<br>• The reception pit of the A18 crossing.<br>• The pipeline working width. |
| | | • A key embedded mitigation measure for the Lincolnshire Wolds National Landscape is a short construction timeframe. Clarity is needed on the expected timeframe for works in the Lincolnshire Wolds National Landscape. | In any one location the construction activity is likely to endure for seven months. However, for much of this time activities on site will be limited to earth moving using construction vehicles of a similar scale to agricultural machinery. The key activities that are more incongruous in an arable setting are the pipe deliveries, pipe stringing, and lowering of the pipeline into the trench. However, these activities are likely to progress at pace and will typically be present in any one location for no more than two months |
| | | • Further clarity on whether the route can be fully and successfully reinstated. | The Applicant has provided additional information about the proposals for reinstatement, and the likelihood of successful restoration. This information is provided in the Applicant's Comments on Written Representations [**REP2- 029**] submitted at deadline 2. |

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| 2.17.39 | NE29d<br><br>Protected Landscapes | Comment Natural England advises that the evidence presented does not rule out the persistence of significant residual effects on the statutory purposes of the Lincolnshire Wolds National Landscape within the operational phase.<br><br>Recommendation | The Applicant has reviewed this further detailed advice and prepared a supplementary note that will be shared with Natural England. A meeting has been arranged for 21 May to discuss the supplementary note, a copy of which the Applicant intends to issue at Deadline 3. |
| | | • A list of the potential impacts to the Lincolnshire Wolds National Landscape that are not fully reversible, and their significance. | There are no potential impacts on the Lincolnshire Wolds National Landscape that are not fully reversible. |
| | | • Remove reliance on the mitigating effect of remaining field boundaries in the landscape when concluding the impact of hedgerow loss with potential to affect the Lincolnshire Wolds National Landscape. | Technical Note in Response to Natural England's Written Representation Regarding the Lincolnshire Wolds National Landscape [**REP3-025**], provided at deadline 3, includes a review of all potential effects on the special qualities of the LWNL, including hedgerows. The reference to retention of field boundaries is meant to highlight that field patterns remain unaltered, despite the introduction of the pipeline. The conclusions reached regarding potential effects on the special qualities does not rely on the retention of field boundaries. |
| | | • Clarify the maximum hedgerow removal distance. | The maximum extent of hedgerow removal, at any one hedgerow, would be 10 m. |
| 2.17.40 | NE29e<br><br>Protected Landscapes | Comment Natural England advise that the assessment of cumulative effects should include an assessment of the impacts of relevant proposals currently at scoping stage, such as the Grimsby to Walpole National Grid project (Section 7.11, APP-049).<br><br>Recommendation<br><br>• Provide justification as to whether the assessment of cumulative effects should include the Grimsby to Walpole National Grid project. | At the time the cumulative assessment was undertaken National Grid had not submitted a Scoping Report for the Grimsby to Walpole Project. As of the date of this response a Scoping Report has still not been submitted. It is therefore not possible for the Applicant to include an assessment of cumulative effects with the Grimsby to Walpole project. It will be necessary, however, for applicant for the Grimsby to Walpole project to consider the Viking CCS Pipeline in its cumulative assessment. |
| 2.17.41 | NE29f<br><br>Protected Landscapes | Comment Natural England advise that all visible surface infrastructure is considered within the landscape and visual assessment, inclusive of the temporary access and laydown areas, one of which includes HGV parking and hard infrastructure within the Lincolnshire Wolds National Landscape boundary near Irby upon Humber (Chapter 3, Figure 3-30 1 of 3, APP-045).<br><br>Recommendation | All visible infrastructure associated with the Proposed Development including the impact of temporary access and laydown areas have been assessed within ES Chapter 7 Landscape and Visual [APP-049]. |
| | | • Provide justification that all visible surface infrastructure is considered within the landscape and visual assessment. | The assessment presented in ES Chapter 7 Landscape and Visual [APP-049]. includes all visible infrastructure associated with the Proposed Development. Paragraph 7.8.2 to 7.8.6 notes the various elements potentially impacting landscape and visual receptors by category and stage (construction/operation). In the assessment each section has a summary of effects from the combined elements and if applicable those in other sections, noting that the pipeline is the main element which potentially gives rise to inter-section effects and there is little or no |

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| | | | intervisibility from other elements such as BVS due to distance and intervening vegetation. |
| | | • Ensure the landscape and visual assessment considers the impact of temporary access and laydown areas. | • The assessment presented in ES Chapter 7 Landscape and Visual [APP-049]. includes the impact of temporary access and laydown areas. Their presence is highlighted at Para 7.8.2 and then throughout the Visual Assessment as part of the construction activity described for individual viewpoints. |
| 2.17.42 | NE29g<br>Protected Landscapes | Comment Natural England advise that there is a need for clarity on whether the route can be successfully reinstated.<br>Recommendation | • There are considered to be no risks to successful reinstatement of the pipeline route within the Lincolnshire Wolds National Landscape (LWNL). Successful reinstatement of land depends in part upon the resilience of the soils to damage when they are moved and reused. A soil's natural resilience to damage is a function of its texture (how clayey or sandy the soils is, with clay soils being less resilient than more sandy soils), and the soil's drainage characteristics (with wetter soils being less resilient to damage than drier, better drained, soils). This is reflected in the assessment methodology set out in the Institute of Environmental Management & Assessment (IEMA) guidance document 'A New Perspective on Land and Soil in Environmental Impact Assessment' which was followed in the assessment presented in ES Chapter 10: Agriculture and Soils [APP-052]. Within the LWNL the pipeline will be routed through soils of the Holderness and Burlingham 2 soil associations, both of which are classed as being of medium sensitivity and which are readily protected from damage through the application of industry standard good practice measures for soil handling. Detailed surveys to further describe the soils present within the working areas of the pipeline (including those within the LWNL) will be undertaken post-consent to inform the detailed Soil Management Plan (SMP). This will build upon the Outline SMP [ES Appendix 6.4.10.1 Revision B submitted at deadline 2] in setting out the appropriate / soil-specific soil handling methods to be applied during construction and reinstatement. Consequently, there would be no discernible loss or reduction in soil functions or soil volumes that would restrict or prevent the pre-construction land use from being reinstated (i.e., no downgrading of land quality would occur).<br>• As set out in the Outline SMP [ES Appendix 6.4.10.1 Revision B] submitted at deadline 2, the quality of the soil reinstatement will be verified by the project's Land Officer (or similar); and post-restoration surveys will be conducted across all land reinstated to agriculture, to determine whether target soil profile specifications have been met. This 'after' statement will be compared to the 'before' statement (the pre-construction survey data) to verify that the land has been restored to the required standard.<br>• It is highly unlikely that trenchless techniques will need to be used to avoid trees as the route within the LWNL has been designed to avoid treed areas wherever possible. Where there are lines of trees to be crossed there are typically gaps between them that are sufficiently wide so that tree loss can be avoided or reduced. If trenchless techniques were used, it is considered that the proposed 2m minimum depth would be sufficient. Typically, the roots of UK native trees extend to a depth of no greater than 2 metres. Around 80-90% of the widespread root structure is found within the top 60 centimetres of the soil profile.<br>• A reference to the relevant soil monitoring and management measures in the Soil Management Plan [APP-096] has been included in update B of the Outline Landscape and Ecological Management Plan (OLEMP) [6.8] |

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| | | The ES should include a clear assessment, based on a full survey of the route, of the potential for and risks to full reinstatement of the route within the Lincolnshire Wolds National Landscape and its setting. | • The Applicant has provided additional information about the proposals for reinstatement, and the likelihood of successful restoration. This information is provided in the Applicant's Comments on Written Representations [**REP2- 029**] submitted at deadline 2. Responses to points 2.17.29 and 2.17.30 are of most relevance. In this response the following commitment is made "*all BMV agricultural land (land of Grades 1, 2 or Subgrade 3a) which is temporarily disturbed during construction will be returned to its original ALC grade by the end of the five-year aftercare period*".<br>• Given this, and the extensive set of measures set out in the outline Soil Management Plan, it is considered highly unlikely that full reinstatement of the route of the pipeline in the National Landscape and its setting could be achieved. |
| | | Information should be provided on the feasibility and risks of using trenchless methods for avoiding trees, including the suitability of a 2m minimum depth under trees. | • There are very few trees within the Order limits within the National Landscape and most, if not all of them, will be avoided through micro routeing of the pipeline. Any trees present are within hedgerows and reducing the width of hedgerow crossing to a maximum of 10m will ensure that few trees would be impacted.<br>• It is unlikely that trenchless techniques would need to be used, however if they were there is no risk as using an auger bore technique means there would be no unsupported trench/bored hole. The roots of native UK tree species are typically limited to the top 100mm of soil and a 2m minimum depth for the pipe would therefore be sufficient to avoid any impacts on tree roots. |
| | | The LVIA should reference the Soil Management Plan, which is important in ensuring the land is restored suitably to enable successful vegetation reinstatement. | • The technical note provided at Deadline 3 [**REP3-025**] includes reference to the Outline Soil Management Plan [**REP2-018**] as a measure that will ensure rapid and successful restoration of land and establishment of vegetation. |
| | | We advise that information is supplied on whether the trenchless methods described risk disturbing sensitive chalk streams, and what residual impacts could occur. | • There is considered to be no risk to chalk streams as a result of the trenchless techniques proposed to cross under them. There are no chalk streams being crossed within the National Landscape. There are two chalk streams being crossed close to the National Landscape.<br>• Laceby Beck – this chalk stream would be crossed under using an auger bore trenchless technique. The chalk stream emerges at the foot of the Wolds, immediately east of the A18, outside of the National landscape. The crossing would be approximately #m east of the boundary of the National Landscape. There is no risk of frac out related to and auger bore crossing technique.<br>• Waithe Beck – This chalk stream would be crossed using either auger bore or HDD. Again, an auger bore crossing would be set back between 2 and 10 m back from the banks of the beck and a minimum of 2 m below the bed of the beck. If HDD were to be used the pipeline would be between 5 and 20 m beneath the beck. The HDD works would be undertaken in strict compliance with best practice and following the requirements of a bentonite breakout plan which would include measures to both avoid the risk of breakout, and to limit the effects of breakout, in the unlikely event of breakout occurring. |
| | | Clarity is sought on any requirement for signage along the route of the pipeline during the operation. | • There is a requirement for pipeline marker posts, similar to those on Uniper's KiPS pipeline. There would be a maximum of five marker posts located within the National Landscape. |

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| 2.17.43 | NE29h<br><br>Protected Landscapes | Comment Natural England advise that there is a need for clarity on what monitoring arrangements will be put in place and what remedial works might be undertaken if an adequate level of reinstatement is not being achieved.<br><br>Recommendation<br><br>• Provide more information on what monitoring arrangements will be put in place and what remedial works might be undertaken if an adequate level of reinstatement is not being achieved.<br><br>• Ensure the outline Landscape and Ecological Management Plan includes the Landscape Design Principle (embedded mitigation) for monitoring.<br><br>• Provide clarity on when the detailed plan for the establishment and management of new hedgerows will be developed | • Reinstatement of agricultural land will be undertaken in line with the Soil Management Plan [**APP-096**]. This plan includes a requirement for annual monitoring to check for significant differences in crop performance, compaction and waterlogging between the restored and undisturbed land, until such time as unrestricted agricultural use can commence. As described in the response to Topic NE29g, pre-construction and post-restoration survey data will be used to verify that the land has been restored to the required standard. It is not expected that remedial works would be required, however if a need is identified the remedial measures would be similar to the proposed reinstatement work (as described in the Outline SMP [ES Appendix 6.4.10.1 Revision B submitted at deadline 2]) and may include reinstalling underdrainage, further decompaction of subsoil (see response to Topic NE26g), further topsoil cultivation (tilling), application of lime or fertiliser, etc. Any remediation measures would be undertaken in agreement with landowners and (if applicable) tenant farmers.<br><br>• The Outline Landscape and Ecological Management Plan (OLEMP) (Revision A) (document reference 6.8) sets out the monitoring periods during the five-year establishment maintenance period and long term maintenance period for newly created hedges. A detailed plan for the establishment, management and monitoring of new hedgerows will be developed within the Final LEMP. |