MILLS & REEVE

Your reference:
Our reference: MFBA/4060919-0005
Document number: 752815966_1

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3 February 2025

Dear Sirs

Outer Dowsing Offshore Wind (the trading name of GT R4 Limited) ("the Applicant")

Proposed Outer Dowsing Offshore Wind Farm Order

Deadline 4 submissions on behalf of T.H. Clements & Son Limited ("T.H. Clements")

Mills & Reeve continue to be retained by T.H. Clements and have been instructed to make the following submissions to the Examining Authority ("ExA") at Deadline 4 of the examination.

These submissions have been prepared in conjunction with the following experts appointed by T.H. Clements:

- Mr Phillip Wright of Wright Resolutions Limited (soil expert);
- Mr Iain Gould, Associate Professor of Soil Science at the University of Lincoln (soil expert);
- Mr Damian Pawson of Sweco UK (air quality expert); and
- Mr Daniel Jobe of Brown & Co. (surveyor).

Appendices 1-4 of the written representation submitted by Mills & Reeve on behalf of T.H. Clements [RR-067] set out the qualifications and relevant experience of the above experts.

1 Responses to ExA's further written questions (ExQ2) [PD-020]

1.1 Please refer to appendix 1 for T.H. Clements' responses to the ExA's second written questions published on 13 January 2025.

2 Comments on the Applicants update to the draft DCO [REP3-006]

2.1 While T.H. Clements continues to liaise with the Applicant on the draft DCO, the DCO is not agreed. T.H. Clements' position on the DCO remains as per its post-hearing

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submissions including written summaries of oral case at ISH 1 [REP3-059], and its comments on the Applicant's update to the draft DCO [REP3-063].

3 Comments on Outline Code of Construction Practice (Tracked) [REP3-021]

3.1 Appendix 2 comprises an updated copy of the Outline Code of Construction Practice provided to T.H. Clements by the Applicant after Deadline 3, with T.H. Clements requested changes shown in track and explanatory comments set out in comment bubbles. Due to illness within the Applicant team, THC has not heard further from the Applicant on these changes, so the extent to which any concerns raised and amendments sought have or will be addressed by the Applicant cannot be confirmed

4 Comments on Outline Soil Management Plan [REP3-023]

4.1 Appendix 3 comprises an updated copy of the Outline Soil Management Plan provided to T.H. Clements by the Applicant after Deadline 3, with T.H. Clements requested changes shown in track and explanatory comments set out in comment bubbles. Due to illness within the Applicant team, THC has not heard further from the Applicant on these changes, so the extent to which any concerns raised and amendments sought have or will be addressed by the Applicant cannot be confirmed

5 Comments on the Applicant's update to the Land Rights Tracker [REP3-034]

5.1 The Applicant and T.H. Clements are continuing to engage with a view to agreeing Heads of Terms for a voluntary agreement. A meeting to discuss the Heads of Terms was held on 8 January 2025. A meeting to discuss dust dispersion specifically, which is a key concern for T.H. Clements, was held between the parties' respective air quality experts on 10 January 2025, with other team members from both the Applicant and T.H. Clements also in attendance. That meeting is discussed further in T.H. Clements' response to ExA Q2 LU1.6, however, in summary, there was no agreement reached between the experts on the area of land farmed by T.H. Clements at high risk of visible dust impact due to the construction of the proposed Project. Notwithstanding this, the parties are continuing to liaise on the Heads of Terms and key DCO documents (including the oSMP and oCoCP), with a view to narrowing down points of disagreement and reaching a compromise position.

6 Comments on The Applicant's Comments on Deadline 1 Written Representations [REP3-038]

6.1 Please refer to appendix 4 for T.H. Clements' comments on the Applicant's comments on T.H. Clements' Written Representations [RR-067].

6.2 Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 of appendix 4 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments on T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

7 Comments on The Applicant's comments on ExQ1 Responses [REP3-054]

7.1 Please refer to appendix 6 for T.H. Clements' comments on the Applicant's comments on T.H. Clements' ExQ1 responses.

7.2 Please Note: T.H. Clements' comments on The Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

8 Comments on Clarification Note Climate Change, Increased Rainfall & Soil Impacts [REP3-055]

8.1 Please refer to T.H. Clements response to Q2 LU 1.12 of the ExA's further written questions (ExQ2).

9 Comments on Clarification Note Land Take, Soil calculation and Storage Bunds [REP3-056]

9.1 Please refer to T.H. Clements response to Q2 LU 1.3 of the ExA's further written questions (ExQ2).

9.2 Should the ExA require any additional information in relation to this representation, please contact [redacted] [redacted] or [redacted] [redacted] of Mills & Reeve at [redacted]@mills-reeve.com or [redacted]@mills-reeve.com.

Mills & Reeve LLP

Appendix 1 - Responses to ExA's further written questions (ExQ2) [PD-020]

ExQ2: Issued Monday 13 January

Response by T.H. Clements & Son Limited (IP Ref. 20049059)

ExQ2	Question to:	Question:	Response:
CA Compulsory Acquisition, Temporary Possession and Other Land or Rights Considerations			
Q2 CA 1.1	Affected persons/relevant interested parties	**Known inaccuracies** Are any Affected Persons or relevant Interested Parties aware of any inaccuracies in the BoR [REP3-011], SoR [REP3-014] or Land Plans [REP3-004] and [REP3-005]? This question is repeated, with updated examination library references, in the absence of responses from any affected persons or relevant interested parties at deadline 2	T.H. Clements & Son Limited's ("**THC**") appointed surveyors have not identified any inaccuracies in the BoR [REP3-011], SoR [REP3-014] or Land Plans [REP3-004] and [REP3-005].
LU Land Use, Geology and Ground Conditions			
Q2 LU 1.1	The applicant T.H. Clements & Son Ltd	**Onshore Export Cable Corridor (ECC) alternatives - Agricultural Land Classification (ALC)** In response to ExQ1 LU 1.2 [REP2-051], the applicant provided appendix 1.14 which provides a plan of route options and a table of predicted ALC grades. In addition, the weighting of the options is also presented in response to matters raised in T.H. Clements & Son Ltd's Relevant Representation [RR-067]. • Can the applicant clarify why table 1.14 shows both option 2a and option 2A? • T.H. Clements & Son Ltd is invited to respond to the information presented by the applicant.	We note the further explanation and weighting. The approach to weighting has not been explained but it appears a factor of 3, 2, 1 has been applied to Grades 1, 2 and 3a respectively. We are not convinced that simple approach properly reflects the value of Grade 1 land but we do not pursue this point any further given (a) it is clear that any route will materially impact BMV and (b) our focus on the impacts on farming businesses.

ExQ2: Issued Monday 13 January

Response by T.H. Clements & Son Limited (IP Ref. 20049059)

ExQ2	Question to:	Question:	Response:
Q2 LU 1.2	Natural England (NE) Lincolnshire County Council (LCC)	**Agricultural Land Classification (ALC) survey** The applicant's response to ExQ1 LU 1.7 [REP2-051], identifies examples of other Nationally Significant Infrastructure Projects (NSIPs) being approved by the Secretary of State (SoS) prior to ALC surveys being undertaken. In the case of the Hornsea Four Offshore Wind Farm, the applicant also points to the advice given by NE at the time which, whilst expressing a preference for pre-consent ALC surveys, accepted that the matter could be addressed via a planning condition. NE and LCC are invited to comment on whether the approach taken on other NSIPs in terms of the timing of ALC surveys has any implications for their respective positions on this matter.	THC's response relates less to the timing of ALC surveys and more to their accuracy and sufficiency for the purposes of soil restoration. THC request (as referred to in section 2.4, paragraph 23 of the oSMP [REP3-022]) that soil assessments are undertaken on all of their land by a combination of visual assessment and laboratory analysis to UKAS accredited standards, following the AHDB Soil Health Scorecard Approach and Sampling Prototol for England and Wales as detailed in Table 1 of the oSMP. Such assessments must be made for each soil horizon identified, including, where applicable, upper and lower topsoil, together with upper and lower subsoil horizons. As previously explained, this is in order to enable soil restoration to the state of the soil prior to construction. It is vital that the soils are in the same condition post-construction as pre-construction, in order that the cable corridor area has similarly performing (including re rate of crop growth/ maturity (harvest date) and therefore marketable yield in the case of vegetables) crops compared to the areas immediately adjacent (which retain their characteristics, being unaffected by the construction activities) in the same field.

ExQ2: Issued Monday 13 January

Response by T.H. Clements & Son Limited (IP Ref. 20049059)

ExQ2	Question to:	Question:	Response:
Q2 LU 1.3	T.H. Clements & Son Ltd	**ECC "working width" during construction** Please provide comments on the applicant's Clarification Note: Land Take, Soil calculation and Storage Bunds [REP3-056].	The Clarification Note: Land Take, Soil calculation and Storage Bunds [REP3-056] raises a number of questions in relation to land take, as opposed to answering them: (1) There are known lengths of cable that will be installed by trenchless techniques. It is confirmed by the Applicant that this will lead to a lesser requirement for soil storage. Indeed it is indicated that there will be no requirement for upper subsoil and lower subsoil bunds (REP3-056, §27). This removes the need for 4x bunds across the width of the corridor (see PER3-056, Plate 1) in those locations. (2) The Applicant has indicated to THC in its response to THC's dust modelling that there will not be the need for a haul road where trenchless techniques are used. If so, that removes a further land requirement. The Applicant has not attempted to justify the proposed 80m corridor in areas where trenchless techniques are proposed. REP3-056, s.1.6 purports to do this but cross refers to PD1-071, the response to RR-067,012 (page 403 of 481) but this does not justify an 80m corridor where trenchless techniques are proposed to be used. Accordingly, the Applicant has not – when invited to – been able or willing to justify the 80m where trenchless installation is used.

ExQ2	Question to:	Question:	Response:
			Justification for land take is fundamental in the context of compulsory purchase. The Applicant's case on this issue where trenchless techniques has not been made out. In so far as it is based on the assertion that the 60m permanent easement must be able to be located anywhere in the 80m corridor this does not appear to THC to stand up. PD-071, the response to RR-067,012 (page 403 of 481) has a plate showing the 60m corridor – it is centred on the cables themselves. Given the requirements for soil storage etc in the construction, the cables have to be broadly either side of the centre of the corridor (where the haul road will be) and given the 60m corridor will be centred on the cables (it is for their maintenance), the notion of flexibility in this regard appears illusional and certainly does not justify the 80m land take where trenchless techniques are used. **Relation to dust dispersion modelling:** REP3-056 presents updated detail on the volume of soil to be excavated within the working width, which now includes topsoil, upper subsoil, and lower subsoil layers. It also provides revised details of the soil storage bund configuration and dimensions. This level of detail, although requested by THC prior to commencing the dust deposition modelling to inform its written representations (REP1-050), was not available. As such, the dust deposition modelling

ExQ2	Question to:	Question:	Response:
			principally relied on the information presented in the Project Description (APP-058) and oSMP (REP3-022). However, for assurance, THC has applied the updated soil excavation and bund dimensions presented in REP3-056 to the emissions inventory compiled for the initial THC study (REP1-050). The dust emissions inventory presents the calculated total mass of dust emissions relating to the proposed Project's construction. For each relevant construction activity, a referenced emission factor was multiplied by the respective activity rate to derive dust emissions. The total mass emissions (i.e., all three phases combined) in the inventory, based on the information provided in REP3-056, are 5% lower than the total reported in the THC study (REP1-050). On a phase-by-phase basis (Enabling Works, Cable Infrastructure Installation, Demobilisation & Reinstatement), the difference in mass dust emissions between the initial (REP1-050) and updated totals ranges from +11% to -20%. In the context of the limitations and assumptions applicable to the THC study, as outlined in Appendix 14 of REP1-050, these differences in dust emission totals represent a reasonable level of tolerance. In other words, this comparison demonstrates that the project-specific information and assumptions applied

ExQ2	Question to:	Question:	Response:
			to the emissions inventory in REP1-050 are appropriate. On this basis, and given that THC has proactively secured additional land to offset the impact of the ODOW project on their current farmland, there would be no value at this stage in expending additional financial resources to re-run the dust dispersion model. THC have provided a detailed update on discussions with the Applicant relating to dust contamination in their response to Q2 LU 1.6. The Applicant's report on THC's dust dispersal assessment contained in THC's written representations [REP1-050] formed the basis of these discussions. THC understands that the Applicant intends to materially update this report for issue at Deadline 4. THC has not seen this document and reserves its position to review and comment on the report at the ISH on 12 February and/or subsequently in writing at Deadline 5. THC's response to Q2 LU 1.6 also includes a response relating to trenchless techniques areas within the dust dispersion modelling study area.
Q2 LU 1.4	The applicant Woodlands Farm (Kirton) Ltd and Andrew Peter Dennis	**Severance of agricultural land during construction** In response to ExQ1 LU 1.5 [REP2-051], the applicant provided further clarification in relation to its approach to severed land. This includes proposals as set out in Section 5.14 of the Outline Code of Construction Practice (oCoCP) [REP3-	The Applicant issued a copy of the oCoCP [REP3-021] to THC to allow them to mark up the oCoCP with comments and requested amendments. THC has done so. Due to illness within the Applicant team, THC has not heard further from the Applicant at the time of writing this response, so the extent to which any

ExQ2	Question to:	Question:	Response:
		021] for the production of management plans for individual affected persons following liaison with them. The matter was also discussed at Issue Specific Hearing 3 on 5 December 2024. The ExA understands that T. H. Clements [REP3-060] intends to liaise with the applicant on the wording of the oCoCP to address its outstanding concerns. **To Woodlands Farm (Kirton) Ltd and Andrew Peter Dennis:** • Please provide comments on the applicant's proposed approach to working with affected persons to identify and manage severed land. Concerns are raised by T. H. Clements regarding the implications of the potential scenario whereby agreement is not reached between the applicant and affected persons as envisaged in section 5.14 of the oCoCP [REP3-065]. However, the ExA also notes that section 5.14 states that the applicant "will liaise with landowners and tenants to agree a management plan…" amongst other apparent commitments to reach agreement. **To the applicant:** • Does section 5.14 of the oCoCP provide a commitment for the applicant to agree areas of severed land, related management plans and access arrangements? If so, should this commitment be made clearer in the oCoCP	concerns raised and amendments sought have or will be addressed by the Applicant cannot be confirmed. Appendix 3 to THC's Deadline 4 submission comprises a copy of the oCoCP marked-up with THC's requested amendments and explanatory notes as to why those amendments are requested. THC understands that the Applicant will submit an updated version of the oCoCP at Deadline 4. With regard to question posed to the Applicant, although Requirement 18 of the draft Development Consent Order [REP3-006] requires approval of the oCoCP from various bodies, it does not currently provide for consultation with landowners. It is imperative, therefore (in the absence of requirement for landowner consultation in Requirement 18,(which point THC has raised in the context of the DCO itself), that the oCoCP is in a form that provides reassurance that the final CoCP will sufficiently protect the interests on landowners and occupiers. Item 5.14 of the oCoCP provides the approach to 'Severed Land'. The Applicant has reiterated the position that they will liaise with landowners and tenants to mutually agree areas that can reasonably be considered as severed. Whilst this approach is welcomed, and the further comment that compensation would be paid for any losses as a result of the severance is reassuring, there

ExQ2	Question to:	Question:	Response:
		and/or the draft Development Consent Order (dDCO) [REP3-006]? If not, what mechanism is in place to resolve disagreements, should they arise?	is still insufficient detail to be of complete comfort, especially given the lack of progress in respect of this matter to date. In the Applicant's response to THC's Written Representations [REP3-038, 1.10, 4.2.133], the Applicant has also "committed to undertaking a joint initial assessment of severed land with THC land agent, based on the maximum design scenario for indicative purposes only", but this has not been forthcoming and no such discussions have taken place. A key concern is that the Applicant does not appreciate that prompt engagement would provide more opportunity for THC to understand the overall impact of the project and appropriately mitigate such losses to adequately protect its business. It would be encouraging to see some meaningful proactivity from the Applicant in making arrangements to begin agreeing areas severed by the Applicant during the construction period. The Deadline 3 draft oCoCP was silent on any mechanism to resolve disputes in connection with severed areas, their management and crossing points. Reference to a process or method of resolving such disputes, should they arise, for example, appointment of an independent arbitrator by the RICS, is necessary as a fall-back position to any discussions.

ExQ2	Question to:	Question:	Response:
			THC has inserted a disputes provision into its mark-up of the draft oCoCP at Appendix 2, and is hopeful that this will be accepted by the Applicant.
Q2 LU 1.6	The applicant T. H. Clements & Son Ltd Interested Parties (IPs) represented by Brown & Co Property and Business Consultants LLP	**Dust contamination** The ExA notes from the applicant's response to T.H. Clements & Son Ltd Written Representation [REP3-038] that a meeting was scheduled to take place on 8 January 2025 to discuss respective positions in relation to dust dispersion as well as other matters. **To the applicant and T.H. Clements & Son Ltd:** • Please provide an update on discussions between the two parties in relation to the dust dispersion modelling [REP1-050]. This should clearly identify matters upon which there is agreement or disagreement in terms of methodology and outcomes. Where disagreement is identified, please specify if this is likely to remain at the close of the examination or if further action is being pursued to resolve the matter. **To IPs represented by Brown & Co Property and Business Consultants LLP:** • Please confirm if you have any further comments to make on dust contamination further to matters raised in respective relevant representations.	The meeting between THC and the Applicant to discuss the respective positions in relation to dust dispersion took place on 10 January 2025. Overall, there was no agreement reached between the parties on the area of land farmed by THC at high risk of visible dust impact due to the construction of the proposed Project. This included distinct disagreement between the air quality experts on the justification for THC adopting dispersion modelling of dust impacts, within the context of Institute of Air Quality Management (IAQM) guidance. This, and other matters of disagreement, are detailed below. Based on the outcomes of the call on 10 January, at this stage, it would appear likely that this disagreement will remain at the close of the examination. However, the parties are continuing negotiations with a view to reaching a compromise position on the area of land at high risk of being affected by visible dust and the appropriate amount of mitigation land. In advance of the meeting, the Applicant issued a copy of their review of THC's Written Representation (REP1-050) with respect to the dust dispersion assessment via email to THC's legal representatives (Mills & Reeve LLP) on 7 January 2025. The document reference is as follows:

ExQ2	Question to:	Question:	Response:
			- SLR Consulting Limited (7 January 2025) *Outer Dowsing Offshore Wind DCO: T.H. Clements & Son Limited Written Representation (REP1-050)* The above document dated 7 January 2025 formed the basis for the discussion on 10 January and is referenced throughout this response as *ODOW-SLR-Jan25*. However, THC understands that subsequent to the meeting on 10 January, the Applicant intends to materially update the above document, which will be issued by the Applicant at Deadline 4. At the time of writing, THC has not seen the Applicant's updated document. Therefore, THC reserves its position to review and comment on the report at the ISH on 12 February and/or subsequently in writing at Deadline 5. For clarity, any references to the ODOW report provided below are taken from the version dated 7 January (*ODOW-SLR-Jan25*), which has not been submitted as part of the Examination. The key outcomes of the Applicant's review are provided in Section 5 of *ODOW-SLR-Jan25* and are provided verbatim below: - ***Contradicts UK Technical Guidance**: The IAQM, the UK's professional body for air quality, explicitly advises against using dispersion modelling for dust impacts due to the lack of accurate UK-specific emissions data. This approach is described as "extremely rare," "not recommended," and "inappropriate" in its guidance.* - ***Unvalidated Emission Factors for UK Climate**: The study relies on emission factors from regions*

ExQ2	Question to:	Question:	Response:
			like the USA and Australia, which are recognised to overestimate emissions in the UK context. Although adjusted for UK conditions, inherent uncertainty and biases persist. - ***No Model Validation**: The study relies on predictions, but no validation exercise was conducted to improve its reliability. Validation studies in the USA indicate a four-fold overestimation in dust emission modelling.* - ***Continuous Construction**: The study assumes uninterrupted construction over a 48.3km segment for three years at maximum parameters, which is incorrect as construction is intended to be sequential.* - ***Conflicting Construction Activities**: The model assumes overlapping, simultaneous activities, such as continuous soil stripping and wind erosion over a year, which is neither feasible nor representative of practical construction scenarios.* - ***Misalignment with the Project Description**: The modelling approach incorporates activities that are misaligned with the scope and sequencing of the Project, eroding its reliability.* - ***Inappropriate Wind Erosion Modelling**: Emission factors for wind erosion are 20-80 times higher than default emissions validated in Australia and the US. Additionally, the model simulates emissions even during periods of insufficient wind speeds to initiate erosion, leading to overpredictions.*

ExQ2	Question to:	Question:	Response:
			- ***Trenchless Techniques Excluded****: The modelling disregards trenchless construction techniques that avoid surface-level excavation. There are over 150 defined trenchless locations within segments 5 to 14 of the onshore ECC (20% of the study area), yet the study presumes continuous open-cut excavation for the full 48.3km length.* - ***Unrealistic HGV Movements****: The study assumes that HGV movements will traverse the entire length of the haul roads within each segment generating dust continuously over the three years, overlooking access points specified in the application. Further, haul roads may not be constructed at locations where trenchless construction planned.* - *Due to these issues, the assessment is inherently unreliable and unsuitable for estimating potential dust soiling impacts and determining the extent of land potentially affected for farming. The evidence base underpinning the assertion that approximately 85 hectares of land would be rendered unusable is flawed. While justifications may be provided, the Applicant maintains the IAQM's position is clear: modelling dust impacts in this context is inappropriate.* The below sets out THC's written response to each of the above points raised by the Applicant in their review of REP1-050 (*ODOW-SLR-Jan25*). - ***Contradicts UK Technical Guidance****: The IAQM, the UK's professional body for air quality,*

ExQ2	Question to:	Question:	Response:
			explicitly advises against using dispersion modelling for dust impacts due to the lack of accurate UK-specific emissions data. This approach is described as "extremely rare," "not recommended," and "inappropriate" in its guidance. **THC response**: This was a key issue debated during the meeting on 10 January and represents the Applicant's main point of challenge to the THC study, given that page 24 of *ODOW-SLR-Jan25* suggests "…*While justifications may be provided, the Applicant maintains the IAQM's position is clear: modelling dust impacts in this context is inappropriate*". The Applicant's primary response is that the question of dust dispersion should not be addressed. That is convenient, but no answer to the substance of the issues and , in particular, where there is a sensitive receptor the impacts on which must be understood. The Applicant's position is said to be based upon the IAQM's specific guidance (published in 2016) on assessing dust impacts from mineral sites in the operational phase[1]. The 2016 IAQM minerals dust guidance states: "*Detailed dispersion modelling of dust impacts from minerals sites in the UK is extremely rare and is not <u>generally</u> recommended by the IAQM given the lack of accurate UK emissions data for this sector…*

[1] Institute for Air Quality Management (May 2016) *Guidance on the Assessment of Mineral Dust Impacts for Planning v1.1*

ExQ2	Question to:	Question:	Response:
			The collective view of the IAQM Working Group is that it is currently inappropriate to use a quantitative modelling approach to predict the impact in most cases and a qualitative risk-based approach using the S-P-R [Source-Pathway-Receptor] *concept should usually suffice*." (our emphasis) It is of note that the IAQM is currently in the process of reviewing and updating its guidance on mineral dust[2], such that the collective view presented in 2016 may not be representative of current (2025) views. As outlined in REP3-065 (PDF pages 13-14), with appropriate citation from the IAQM's construction dust guidance (published in 2024)[3], the premise for the THC detailed construction dust dispersion modelling was driven by the particularly high quality standards to which THC are held such that there can be no visible dust deposition on the crops it grows on land which will be located directly adjacent to the proposed ECC working width for the construction phase. It is important to note that , the 2016 IAQM minerals dust guidance states that "…*The IAQM does not expect practitioners to follow the suggested approach in all circumstances. Other approaches may also be valid provided they are based on sound scientific principles and are appropriate for the application*." As is clear from the wording of the guidance (see above – "generally", "in most cases", "usually"), dispersion modelling may be appropriate in certain

[2] https://iaqm.co.uk/join-an-iaqm-working-group/

[3] Institute for Air Quality Management (January 2024) *Guidance on the assessment of dust from demolition and construction v2.2*

ExQ2	Question to:	Question:	Response:
			circumstances. The Applicant's position reads the guidance as effectively prohibiting further investigation but that is not what it says at all. It does violence to the generality of the language and the explicit acknowledgement that the general approach will not be followed in all circumstances. In effect, the Applicant is trying, inappropriately, to leverage the guidance to avoid the issue. As is obvious from the terms of the guidance itself that is not a tenable approach. In line with THC's response provided in REP3-065 (PDF pages 13-14), the approach to the dust modelling assessment is considered appropriate here given the proximity of the land THC farms to potentially dust-generating activities during the construction phase, and overall risk to THC's business from crops being contaminated with dust. Notwithstanding the above, it is pertinent to highlight that Section 5.5, page 13 of the IAQM construction dust guidance (2024)[3], which is the document on which the Applicant's construction dust risk assessment was based (AS1-046), states the following: "*Methods for detailed quantitative assessment of construction dust impacts, for example through atmospheric dispersion modelling, are outside the scope of this Guidance. Emission factors are available from sources such as the European Environment Agency (EMEP 2.A.5.b Construction and demolition) to facilitate this process*." It is clear that the IAQM's current position in relation to construction dust directs that, whilst *not within the scope of their guidance document*, *detailed dispersion*

ExQ2	Question to:	Question:	Response:
			modelling <u>can be applied</u> as an assessment approach. (*Our emphasis*). Indeed, the above European Environment Agency (EEA) guidance document referenced by the IAQM – *EMEP 2.A.5.b Construction and demolition guidebook 2023*[4] – cites the use of US EPA AP-42 emission factors in developing a project-specific emissions inventory (i.e. the same suite of factors that form the basis of the dust emissions inventory in the THC assessment). This is also covered in paragraph 61, Appendix 14 of REP1-050. Therefore, the assertion by the Applicant that the assessment "*contradicts UK Technical Guidance*", which "…*explicitly advises against using dispersion modelling for dust impacts*…" is considered to be unfounded within the context of the detailed quantitative assessment completed for THC and with reference to the IAQM's current guidance on construction dust impacts, which facilitates this level of assessment. - ***Unvalidated Emission Factors for UK Climate****: The study relies on emission factors from regions like the USA and Australia, which are recognised to overestimate emissions in the UK context. Although adjusted for UK conditions, inherent uncertainty and biases persist.*

[4] European Environment Agency (2023) *EMEP/EEA air pollutant emission inventory guidebook 2023: Technical guidance to prepare national emission inventories (NFR 2.A.5.b Construction and demolition)*

ExQ2	Question to:	Question:	Response:
			THC response: As stated in paragraph 4.2.72, page 31 of REP1-050, the UK government's National Atmospheric Emissions Inventory (NAEI) cites the use of US EPA AP-42 emission factors[5]. In turn, the US EPA factors form the basis of the factors referenced by the Australian National Pollutant Inventory Emission Estimate Technique Manuals (EETMs). The NAEI states: ○ Emission factors are generally derived from measurements made on a number of sources representative of a particular emission sector. ○ Reference sources for emission factors for many industries are researched by environmental institutions around the world. ○ Many of the key sources of emission factor data that are incorporated into the UK NAEI are cited to be based on US EPA-42 and EEA guidance. Evidently, the emission factors used in developing an emissions inventory, such as those referenced in Appendix 14 of REP1-050, are not restricted to certain regions / climates of the globe. They are cited to be used in/by the NAEI and EEA and, by association, the IAQM construction dust guidance[3] (*see above response*).

[5] https://naei.energysecurity.gov.uk/emission-factors

ExQ2	Question to:	Question:	Response:
			For additional assurance, the International Finance Corporation (IFC, World Bank Group) Environmental, Health, and Safety (EHS) Guidelines applicable to all industry sectors for 'Air Emissions and Ambient Air Quality' cites the use of both US EPA AP-42 and Australian NPI EETMs as examples of acceptable emissions estimation techniques for fugitive emission (e.g. dust) sources[6]. The IFC EHS Guidelines are stated to represent Good Industry International Practice (GIIP) and are referred to in the World Bank's Environmental and Social Framework and in IFC's Performance Standards. Although the use of these emission factors in the THC assessment is justified on the above basis, it is recognised in paragraph 64 of Appendix 14, REP1-050 that they are likely to represent a precautionary approach to estimating dust emissions from the relevant construction activities. As such, a suite of optimistic measures were included in the THC study to provide a balanced assessment and ensure dust deposition results were not overly-conservative. Where possible, the emission factors used in the study relied on site/location-specific variables such that the emission factor was representative of local conditions, thereby reducing uncertainty. These are documented in paragraphs 136-141 of Appendix 14, REP1-050, but includes:

[6] International Finance Corporation (World Bank Group) *General EHS Guidelines: Air Emissions & Ambient Air Quality* https://www.ifc.org/en/insights-reports/2000/general-environmental-health-and-safety-guidelines

ExQ2	Question to:	Question:	Response:
			○ Use of five years of hourly weather data representative of the study area. ○ Soil data (moisture content, silt content, bulk density, particle density) representative of the study area. ○ Application of relatively high moisture contents for soil (30% assumed as constant), although Outline Soil Management Plan (REP3-022) states that "where practicable, soils will only be moved when they are in a dry and friable condition…" ○ For open cable trenches, a 50% dust emission reduction was applied to reflect a lower likelihood of dust generation compared to above-ground surfaces. ○ For dust generated by HGV movements on the haul road, the average daily HGV flows reported in Table 27.28 of AS1-086 were used in deriving emissions as opposed to use of the maximum daily HGV flows given in the same table (see below response pertaining to HGV movements for further context). ○ Similarly, the emissions calculated for wheel generated dust from the haul road optimistically assumed that soil dust from adjacent activities within the ECC working width (e.g. trench excavation/reinstatement), which would be

ExQ2	Question to:	Question:	Response:
			of a finer size, will not settle on the haul road and be re-suspended. It is important to emphasise that the emission factor forms one half of the equation in deriving dust emissions from a given construction activity. The factor must be multiplied by the respective activity rate of the construction activity. i.e. *Emission = Factor x Activity* As reported in Section 4.2.3 of Appendix 14, REP1-050, project-specific and site/local-specific activity data were applied to ensure the robustness and validity of the inventory, within the context of the scale and nature of the proposed construction activities. All of the above were incorporated to the dust emissions inventory in addition to the assumptions relating to the optimistic application of dust controls (mitigation) referenced in paragraphs 142-146 of Appendix 14, REP1-050. - ***No Model Validation****: The study relies on predictions, but no validation exercise was conducted to improve its reliability. Validation studies in the USA indicate a four-fold overestimation in dust emission modelling.* **THC response**: THC appreciates that the Applicant has agreed to THC's position on model validation, stating on page 7 of *ODOW-SLR-Jan25* that the THC study "…*acknowledges that model validation for this specific*

ExQ2	Question to:	Question:	Response:
			assessment scenario is not possible due to a lack of baseline data which is accepted…". Validation of model outputs against observed data was not possible for the dust deposition modelling assessment for the reasons outlined in paragraph 149 of Appendix 14, REP1-050. It is pertinent to acknowledge that the Aermod dispersion model used in the study is a regulatory approved atmospheric dispersion model accepted for use globally, including in the UK (Environment Agency / Defra) and internationally where the IFC EHS Guidelines consider its use to be GIIP[6]. However, model predictions can differ from actual observed data for the reasons detailed in paragraph 147 of Appendix 14, REP1-050. Again, to minimise such uncertainty, project and location-specific data have been used in the study with appropriately optimistic assumptions applied to the modelling, as detailed in paragraphs 148-153 of Appendix 14, REP1-050. Following the above acceptance on the position of model output validation, the Applicant goes on to state on page 7 of *ODOW-SLR-Jan25* "…*However, it* [the THC study] *does not reference published, peer-reviewed validation studies comparing modelled output with measured dust deposition rates to enhance the certainty of the model outputs*". The Applicant proceeds to provide a number of published model validation studies on page 7, which advocate for the application of a "factor-of-four" correction, with the inference made by the Applicant

ExQ2	Question to:	Question:	Response:
			being that the dust deposition model outputs in the THC study should have been divided by four. However, the papers referenced principally focus on regional and/or urban scale dispersion modelling of dust emissions. Such modelling is used to represent far-field impacts in the order of kilometres away from a given source, with a tendency to focus on finer particulate matter (e.g. PM_{10} and $PM_{2.5}$) which can be transported larger distances. In contrast, the THC study solely focusses on total suspended dust and, by definition, only considers near-field dust deposition due to the proximity of sensitive growing fields to the proposed Order Limits (i.e. predominantly within 500 m). Indeed, one of the studies[7] cited in *ODOW-SLR-Jan25* states that "…*accounting for near-source deposition losses is superior to the 'divide-by-four' approach*". The modelling completed for the THC study effectively does this as all receptors are located in proximity to the Order Limits (i.e. near-source dust deposition is modelled). Therefore, the assertion that the THC study reports a "*four-fold overestimation in dust emission modelling*" is patently incorrect within the context of the modelling undertaken and is applied in very different circumstances not relevant here. On page 7 of *ODOW-SLR-Jan25*, the Applicant refers to the approach adopted in the THC study whereby the

[7] Countess, Richard. "*Reconciling Fugitive Dust Emission Inventories with Ambient Measurements*." Presented at Emission Inventory Conference. November 15, 2007.

ExQ2	Question to:	Question:	Response:
			dust control factors applied to the construction dust emissions were optimistically assumed to be implemented effectively from inception and maintained throughout construction, with no reduction in efficacy. The Applicant states on page 7 that "…*This is not a reasonable approach to addressing uncertainty*…" because "…*it does not address the systematic overprediction inherent in the emissions factors*." It is important to restate that the application of dust controls in this manner was not the only approach adopted to minimise uncertainty in the THC study. As outlined in the above response relating to emissions factors, a suite of optimistic measures were included in the THC study to provide a balanced assessment and ensure dust deposition results were not overly-conservative. The dust emission factors used in the study relied on site/location-specific variables, where possible, such that the emission factor was representative of local conditions, thereby reducing uncertainty further. This is documented in paragraphs 136-141 of Appendix 14, REP1-050. An additional key point relates to the assessment criteria applied in the THC study, covered in detail within Section 2.3 of Appendix 14, REP1-050. The criteria set a lenient exceedance frequency threshold of four months / 120 days for any receptor modelled to receive dust deposition above the respective monthly/daily dust deposition benchmark, before it was considered to represent a 'high risk' of visible dust contamination. In reality, visible accumulation could occur over much shorter timescales (e.g. in the order of days) and result

ExQ2	Question to:	Question:	Response:
			in significant revenue losses to THC. This point is acknowledged in paragraph 41 of Appendix 14, REP1-050. However, applying the more lenient threshold for 'high risk' was deliberate to acknowledge the assumptions and limitations applicable to the study, thereby ensuring the results presented were consistent with the precautionary principle without being overly conservative. - ***Continuous Construction****: The study assumes uninterrupted construction over a 48.3km segment for three years at maximum parameters, which is incorrect as construction is intended to be sequential*. **THC response:** With respect to the application of maximum parameters, page 18 of *ODOW-SLR-Jan25* makes it clear that the Applicant's dust risk assessment reported in AS1-046 assessed "…*the entire onshore Order Limits, rather than in the discrete route segments. While dust impacts along the full extent of the Order Limits will not overlap, the assessment assumes a single source active at one time, interacting simultaneously with the surrounding environment.*" This is stated to represent a precautionary approach and captures maximum design parameters / extents of any proposed construction areas (i.e. full extent of the Order Limits). The Applicant's review on page 18 of *ODOW-SLR-Jan25* goes on to criticise, somewhat inaccurately (see further details below), the application of the same

ExQ2	Question to:	Question:	Response:
			precautionary approach within the THC study, citing the "…*use of unreliable inputs*" and "…*a methodology not recommended by the IAQM*". The THC study identifies the risk of potential dust deposition impacts on their sensitive growing fields, using approved and globally accepted emission factors and dispersion model, whilst incorporating appropriate location/site-specific data and proposed project design parameters published in the relevant DCO documents (e.g. APP-058, APP-270, AS1-086, REP3-022), with appropriately optimistic assumptions and assessment criteria applied (see above responses). As such, the assertion that the assessment has used "*unreliable inputs*" is incorrect and, as detailed above, the IAQM construction dust guidance[3] facilitates the application of dispersion modelling for the assessment of construction dust impacts. Therefore, it is incorrect to classify the methodology as "*not recommended by the IAQM*". The Applicants review suggests that the THC study assumes continuous construction over a 48.3 km segment for three years at maximum parameters. This is wrong for the reasons outlined below. It is acknowledged in paragraphs 122 and 157 within Appendix 14 of REP1-050 that construction activities will not occur continuously in each phase and that these are likely to be undertaken sequentially in sections. The approach to phasing in the THC study is further explained in REP3-065 (PDF pages 14-15). However, the indicative timing of sequential construction activities could not be accounted for in the

ExQ2	Question to:	Question:	Response:
			assessment as such details were not available, although were requested by THC (see Table 1-1 of Appendix 14, REP1-050). Instead, the dust deposition results of each of the three modelled construction phases were treated independently, as explicitly presented in Section 6 of Appendix 14. This removed the potential for double counting of dust deposition impacts between phases and overlapping of construction activities between phases. Dust deposition impacts at each receptor in each phase were modelled over short-term periods (daily/monthly). Total annual dust deposition results were ***not*** modelled as that would effectively be a representation of continuous construction across the entire 48.3 km. The adopted modelling approach assesses the risk of dust deposition at a given location under varying weather conditions throughout the year. This is why dust emissions were averaged across the study area for all hours of the year (except for wheel generated dust emissions from the haul road, which were proportioned according to HGV movements in each ECC segment), to acknowledge that the precise timing and duration of a construction activity is not known at any given location. Further details of this approach are provided in paragraphs 155-158 of Appendix 14, REP1-050. This approach facilitated the identification of areas where there is a clear risk that dust emissions from construction could deposit on land THC farms under

ExQ2	Question to:	Question:	Response:
			certain weather conditions. Again, this was done within the context of the assessment criteria, whereby 'high risk' was only assigned to areas where dust deposition rates were modelled to exceed the benchmarks at a frequency of 120 days / four months or more (i.e. a high probability that weather conditions in these locations will promote the deposition of dust from construction activities in proximity). - ***Conflicting Construction Activities****: The model assumes overlapping, simultaneous activities, such as continuous soil stripping and wind erosion over a year, which is neither feasible nor representative of practical construction scenarios.* - ***Misalignment with the Project Description****: The modelling approach incorporates activities that are misaligned with the scope and sequencing of the Project, eroding its reliability.* **THC Response:** As detailed in the above response, the dispersion model outputs were not considered or presented over an annual period, so they did not assume continuous construction activities over a year. Total mass emissions of dust were calculated over a discrete twelve month period in each phase with reference to information provided within the Project Description (APP-058), Outline Soil Management Plan (REP3-022), and Onshore Transport Assessment (AS1-086), as outlined in Section 4.2 of Appendix 14, REP1-050, which included:

ExQ2	Question to:	Question:	Response:
			○ Construction activities relating to the three phases considered in the THC study over a total 36-month period (i.e. assumed 12 months per phase). ○ Main construction compounds and temporary access roads expected to be in use for up to 36 months. ○ Stripping of soil and vegetation across the working width, except for topsoil bund areas. ○ Emplacement of soil bunds for durations that could exceed six months at any given location. ○ Retention of 100% of the haul road for up to a maximum of 36 months. ○ Provision of daily average HGV movements, proportioned by segment of the export cable corridor, for a 42-month period. The information presented within the respective DCO documents clearly indicate that these construction phases will be completed over an approximate 36-42 month period, hence why all relevant construction activities were included in the emissions inventory by phase over a discrete 12 month period. The total mass emissions for each discrete construction phase were represented separately in the dispersion model as average emission rates over a year to acknowledge the absence of detail of the

ExQ2	Question to:	Question:	Response:
			construction activity location, intensity, sequencing, and duration (as outlined in the above response). As considered in paragraph 4.2.113 of REP1-050 and on PDF page15 of REP3-065, the sequencing of construction phases on a section-by-section basis may result in periods of higher dust emission intensity in some cases, where the potential for construction activities to overlap is more likely, albeit over shorter timescales. As stated above, in practice, visible dust accumulation could occur over relatively short timescales (e.g. in the order of days) compared to the exceedance frequency criteria adopted for the assessment. Based on the above, the assertions by the Applicant that the THC study is in "*misalignment with the Project Description*" and contains "*conflicting construction activities*" are considered to be incorrect given that the modelling study is based on the project information presented in the DCO documents and given the absence of further details on how construction phases might be sequenced. - ***Inappropriate Wind Erosion Modelling****: Emission factors for wind erosion are 20-80 times higher than default emissions validated in Australia and the US. Additionally, the model simulates emissions even during periods of insufficient wind speeds to initiate erosion, leading to overpredictions.* **THC response:**

ExQ2	Question to:	Question:	Response:
			As outlined in the above response relating to 'unvalidated emission factors', the emission factors used in the THC study are not exclusively reserved for use in Australia and/or the USA and are accepted for use globally. The wind erosion factor equation used in the THC assessment principally relies on three location-specific variables on climate and soil data, which were available for this study. The Australian NPI *EETM on Fugitive Dust Emissions* (as referenced in Table 4-1 of Appendix 14, REP1-050) advocates the use of the default factors, such as those cited in the Applicants review, only where site-specific data *are not available*. When completing a bottom-up detailed dust emissions inventory and model such as the one for the THC study, the use of site-specific data represents good practice and is preferred over the use of a generic default factor. This was the approach adopted, which aimed to adhere to the precautionary principle, whilst use of site-specific data ensured realism was retained in the assessment. Wind erosion emissions were represented within dispersion modelling in the same manner as other activity sources (i.e. averaged across a whole year, in each discrete phase, for the applicable activity). In terms of the treatment of these emissions, the model for the THC study included a location-specific particle size distribution (PSD) and used hourly weather data for a whole year (including hourly wind speed and direction) representative of the study area. These two key model inputs dictate how and to what extent dust deposition occurs in varying weather conditions. The

ExQ2	Question to:	Question:	Response:
			Aermod model includes enhanced treatment of low wind speeds, such that the potential for over-prediction of dust deposition at low wind speeds is reduced. It is important to note that, whilst wind speed is indeed a key determining factor in modelling dust deposition, other factors such as soil moisture and silt content, ambient temperature, and precipitation all play an important role in the amount of dust that is subject to erosion, transport, and deposition from exposed surfaces. The wind erosion factor equation captures these variables such that an appropriate total annual mass emission can be derived for the inventory and the modelling approach, as outlined above, facilitates the dispersion and deposition of dust at receptors (THC fields) within proximity to the emission source. - ***Trenchless Techniques Excluded****: The modelling disregards trenchless construction techniques that avoid surface-level excavation. There are over 150 defined trenchless locations within segments 5 to 14 of the onshore ECC (20% of the study area), yet the study presumes continuous open-cut excavation for the full 48.3km length.* **THC response:** Prior to commencing the THC study, a request for information was issued to the Applicant to obtain georeferenced spatial information on all proposed cable trenches/trenchless areas, construction

ExQ2	Question to:	Question:	Response:
			compounds, haul road alignment, and soil storage bunds, where such information was available. This request is documented in Table 1-1 of Appendix 14, REP1-050. Although the georeferenced information for the Order Limits boundary was provided, this did not include the relevant information on trench/trenchless areas and cable installation compounds. As such, this made it impractical for any form of measurement to be accounted for in relation to deriving the area of the export cable corridor attributed to trenchless techniques. Therefore, the assessment was progressed in the absence of this information. By association, as outlined on PDF page 15 of REP3-065, the modelling completed for the THC study also excluded potentially dust generating activities associated with all construction compounds along the ECC route (e.g. material import/export, storage) and any dust emissions from construction vehicle movements on the enabling access roads / construction access roads throughout the study area. - ***Unrealistic HGV Movements****: The study assumes that HGV movements will traverse the entire length of the haul roads within each segment generating dust continuously over the three years, overlooking access points specified in the application. Further, haul roads may not be constructed at locations where trenchless construction planned.*

ExQ2	Question to:	Question:	Response:
			THC response: With respect to the comment on haul roads potentially not being constructed in areas where trenchless techniques are proposed, the above response to 'trenchless techniques excluded' applies. Data presented in Table 27.28 of AS1-086 explicitly states the average daily HGV movements in each segment of the export corridor across a 42-month construction programme. As no further breakdown of movements within each segment was provided in AS1-086, these data were utilised in the assessment as presented in Table 27.28. Given the assessed timescales over which dust deposition was assessed in the THC study (daily/monthly), the use of the maximum daily HGV traffic flow data (also presented in Table 27.28 of AS1-086) could have been justified to represent worst case impacts from wheel generated dust. However, for the reasons outlined in the above responses relating to construction phasing and as per paragraph 136 of Appendix 14, REP1-050, this approach was not adopted to avoid an overly precautionary assessment. Furthermore, as outlined in paragraph 138 of Appendix 14, REP1-050, the resuspension of deposited dust on the haul road (i.e. from other construction activities within the Order Limits) was not included as a source of dust. Overall, the THC study has used the HGV movements data in an identical manner to that presented by the Applicant in AS1-086 (i.e. HGV movements proportioned by ECC segment). Indeed, these data

ExQ2	Question to:	Question:	Response:
			could have been interpreted and used in a more precautionary manner than they were (i.e. THC study could have adopted *maximum* rather than *average* movement data). As such, the Applicant's criticism of THC's use of these data is not justified. - ***Due to these issues, the assessment is inherently unreliable and unsuitable for estimating potential dust soiling impacts and determining the extent of land potentially affected for farming. The evidence base underpinning the assertion that approximately 85 hectares of land would be rendered unusable is flawed.*** **THC response**: By way of correction of the above statement, the THC study concluded that, with dust controls in place, up to approximately 107 hectares (264 acres) of land farmed by THC was assessed to be at high risk of visible dust accumulation. Therefore, THC's ability to produce brassica crops in adherence with contractual requirements (free of visible dust) is likely to be compromised within this area, which in turn would significantly impact their business due to financial penalties and/or loss of strategically important contracts. Based on the THC responses provided above, the Applicant's assertion that the study is "*inherently unreliable*", "*unsuitable*", and "*flawed*" is justifiably refuted.

ExQ2	Question to:	Question:	Response:
			The THC study was based on information available at the time of the assessment, relying on location-specific and project-specific information, along with appropriately justified assumptions and assessment benchmark criteria. The study adopted universally accepted guidance on developing dust emissions inventories from fugitive dust emissions sources for use in atmospheric dispersion modelling of near-field dust deposition impacts using a regulatory approved dispersion model, as shown to be facilitated by the IAQM construction dust guidance[3]. - ***While justifications may be provided, the Applicant maintains the IAQM's position is clear: modelling dust impacts in this context is inappropriate.*** **THC response**: THC welcomes the Applicant's acknowledgement that justification for the modelling approach may be provided, which is principally provided within Appendix 14 of REP1-050, in addition to PDF pages 13-17 of REP3-065 and the responses given above. Based on information given within the IAQM construction dust guidance (2024)[3], on which the Applicant's construction dust risk assessment was based (AS1-046), it is clear that applying detailed atmospheric dispersion modelling of construction dust impacts is an appropriate approach. The IAQM construction dust guidance references European

ExQ2	Question to:	Question:	Response:
			Environment Agency guidance on emission factors, which by association, facilitates the use of the same emissions factors as referenced in the THC study. Therefore, the Applicant's stated position that "*modelling dust impacts in this context is inappropriate*" is justifiably refuted. **<u>Applicant's Dust Risk Assessment & Outline Air Quality Management Plan</u>** Section 4 of the Applicant's review document (*ODOW-SLR-Jan25*) restates their adopted construction dust risk assessment and the corresponding level of mitigation that is assigned in line with the identified risk level, as per the IAQM guidance[3]. In Section 4.2.5, page 20 of *ODOW-SLR-Jan25*, the Applicant states: "*As per the IAQM guidance, upon effective implementation of these controls, residual effects associated with construction dust will be not significant across the full extent of the Order Limits, including dust soiling on sensitive crops*." It is pertinent to highlight THC's response provided on PDF page 13 of REP3-065 that, whilst THC has no fundamental issue with the approach adopted by the Applicant, the IAQM guidance wording on residual effects (i.e. with mitigation implemented effectively) is slightly different to that used by the Applicant, with the guidance stating that a residual effect will "…*<u>normally be not significant</u>*" (<u>our emphasis</u>). The guidance goes on to state that "…*even with a rigorous dust management plan (DMP) in place, it is*

ExQ2	Question to:	Question:	Response:
			not possible to guarantee that the dust mitigation measures will be effective all the time" (Section 9.1, page 30), and that there may be cases where "…*there may be a significant effect*." (Section 9.2, page 30). Accordingly, the guidance recognises that "…*it is important to consider the specific characteristics of the site and the surrounding area to ensure that the conclusion of no significant effect is robust*" (Section 9.2, page 30). The THC study actions the above, being driven by the sensitivity of the brassica crops to visible dust contamination, with THC being required to produce crops that are free of visible dust. This makes the farmland through which the onshore cables run particularly sensitive. Although the iterative and qualitative approach to assessing dust risk within the IAQM guidance does include "*commercially sensitive horticultural*" land as a potential receptor of dust soiling, a qualitative approach cannot adequately capture or assess the low tolerance of dust deposition applicable to the crops grown on THC's land, particularly within the context of the stringent customer contractual requirements that apply to THC. Therefore, for the above reasons highlighted by the IAQM guidance, a detailed quantitative assessment of dust impacts was undertaken to consider the specific characteristics of the site, the proposed project, and surrounding area.

ExQ2	Question to:	Question:	Response:
			Within Section 4.5.1, page 20-21 of *ODOW-SLR-Jan25*, the Applicant summarises the monitoring framework included within the Outline Air Quality Management Plan (AQMP), stating that: "*Should monitoring identify dust soiling, an immediate investigation will be carried out, and appropriate mitigation measures will be swiftly implemented. This proactive approach ensures that dust impacts are quickly addressed, effectively minimised, and continuously monitored*." THC welcomes this, but it is important to note that even a short-term construction activity / period resulting in the release of fugitive dust emissions has the potential to have a significant adverse impact on their business due to visible dust accumulation on crops (i.e. this may occur before dust soiling is identified by site personnel). **As outlined in the above responses and within Appendix 14, REP1-050, visible dust accumulation can occur over distinctly shorter timescales than the 'high risk' criterion applied in the THC study.**
Q2 LU 1.7	The applicant	**Soil restoration** Section 5.10 of the oSMP [REP3-023] identifies that a main objective for reinstatement of the land will be to "…restore it to its pre-development quality as far as is reasonably practicable, as determined by the information obtained from the pre-construction soils survey…", However, it does not explicitly commit to restoring land to the current ALC grade along the onshore Export	The methodology for soil reinstatement is set out in section 5.10 of the oSMP. THC's points of concern are: 1. The oCoCP states at 5.15 (108) that cables should be buried 0.3m below operational field drainage depth. In their response to THC's relevant representations [REP1-020, RR-067.20], the Applicant

ExQ2	Question to:	Question:	Response:
		Cable Corridor (ECC) and the 400KV Cable Corridor following construction. Please confirm if the oSMP is intended to commit to restoring land to the current ALC grade along the onshore Export Cable Corridor (ECC) and the 400KV Cable Corridor. If so, please update the oSMP to make this clear. If not, why not?	states field drain depths are usually between 0.9m and 1m (RR067.020). Consequently, the survey depth, if specified at 1.2m falls short of the cable burial depth of (0.3m + 1.0m) 1.3m. In paragraph 4.3.1 (ii) of their Written Representation [REP1-050], THC describe fields having drains at 1.2m depth. This increases cable burial depth by a further 0.2m, requiring a survey depth of 1.5m. 2. At section 2.4, paragraph 17 of the oSMP, the Applicant confirms that surveys will identify topsoil, upper subsoil and lower subsoil horizons. Soil horizon categories must separate topsoil into upper and lower topsoil categories to reflect the variability seen. All horizons need to be treated separately in terms of stripping, storage and reinstatement so the pre-construction soil conditions are correctly replicated after reinstatement. Were this not to be the case, inconsistencies will be likely between the corridor and surrounding field. Inconsistencies in soil characteristics between the corridor and field imply marketable yield variability/inconsistency as described in the response to ExA Q2 LU1.2 above. . THC acknowledges that section 2.4, paragraph 18 of the oSMP has been amended to confirm that pre and post construction stone will be measured by its specific percentage. This change is welcomed by THC.
Q2 LU 1.8	The applicant T.H. Clements & Son Ltd	**Cable burial depth and potential implications** The ExA notes the engagement between the two parties since Issue Specific Hearing 3 [REP3-	THC's position on the draft DCO, cable burial depth and potential implications remains as in its Deadline 3 submissions, particularly its written summaries of oral

ExQ2	Question to:	Question:	Response:
		038]. This includes a review of relevant drafting of restrictive covenant wording to give the consent the same that is being offered in voluntary agreements with the potential for subsequent revisions to the dDCO. The ExA is due to issue its preferred dDCO, proposed schedule of changes, or commentary on the dDCO (if required) on 17 February 2025. **To the applicant and T.H. Clements & Son Ltd:** • Please provide an update on any discussions regarding cable burial depth clearly identifying matters upon which there is agreement or outstanding disagreement between the two parties. • If available, please provide suggested revisions to the dDCO. **To the applicant:** • Provide an update on any discussions with other IPs on this matter.	case at ISH 1 [REP3-059], and its comments on the Applicant's update to the draft DCO [REP3-063].
Q2 LU 1.9	Lincolnshire County Council (LCC) T.H. Clements & Son Ltd IPs represented by Fraser Dawbarns LLP	**Agricultural drainage and irrigation** In response to ExQ1 LU 1.18 [REP2-051], at deadline 3, the applicant updated section 5.15 (Agricultural Drainage and Irrigation) of the oCoCP [REP3-021] to detail arrangements for consultation with landowners regarding pre-	THC is concerned about the principle that, where the existing drainage system cannot be adequately reinstated, an alternative (new) scheme *"over part, or the entirety of the field"* can be installed (point 5 in section 109, and point 6 in section 110 of the oCoCP [REP3-021]).

ExQ2: Issued Monday 13 January

Response by T.H. Clements & Son Limited (IP Ref. 20049059)

ExQ2	Question to:	Question:	Response:
	IPs represented by Brown & Co Property and Business Consultants LLP IPs represented by Hub Rural Ltd Fred Grant Co Savills (UK) Limited William Barker Woodlands Farm (Kirton) Ltd	construction and post-construction drainage works. The document also now states that "The cable shall be installed 300mm below any current drainage system where practical". Does the revised oCoCP address outstanding concerns regarding drainage as identified in respective relevant representations? If not, please specify further measures that should be included.	THC's concerns in that regard are that: **1.** Such an alternative scheme would need to apply to the entire field where drainage pipe depths are changed, in order that a consistent soil moisture status (including water table height) applies. This is needed to provide crop consistency across the field which ensures a marketable yield at harvest is maintained for the field as a whole. **2.** Existing (redundant) drainage must be removed where it is uphill of the cable corridor to avoid this providing water movement to the points of severance of these drains. If this was not done, soil moisture levels in the vicinity of the cable could increase, increasing the risk of farming machinery sinkage under wetter conditions. Paragraphs 4.3.8 to 4.3.15 of THC's Written Representations [REP1-050] describe the risks involved with sinking farm machinery in greater detail. Increased moisture levels in this vicinity also exacerbate marketable yield issues, as outlined in point 1 above. 3. All reinstated or new (replacement) drainage schemes must be capable of being jetted for their full length from an outfall in the surrounding ditch. This requirement is particularly important for high silt content soils (i.e. those farmed by THC along the cable

ExQ2	Question to:	Question:	Response:
			corridor) which require regular maintenance of this type. 4. Point 2 in section 109 and point 3 in section 110 of the oCoCP allows landowners or their drainage consultants 20 working days to respond to the Applicant's drainage reports. 20 working days to respond to a proposed drainage scheme change is not adequate. Drainage design can require significant work to be done to understand all the implications. THC require a minimum of 30 Working Days in which to consider and provide comments on such plans.
Q2 LU 1.11	The applicant Lincolnshire County Council (LCC) East Lindsey District Council (ELDC) Boston Borough Council (BBC) South Holland District Council (SHDC)	**Relationship between the oCoCP, oSMP, oOLP and dDCO** Requirement 18 of the dDCO [REP3-007] makes provision for the preparation of the Code of Construction Practice (CoCP) that must be substantially in accordance with the oCoCP [REP3-021]. It must be submitted to and approved by the relevant local planning authority following consultation with named bodies, including LCC, the Environment Agency (EA) and the relevant statutory nature conservation body. It must include an Organic Land Protocol. Following revisions made by the applicant, requirement 31 now separately secures the preparation of the SMP to be approved by the relevant local planning authority following	As per THC's comments on the Applicant's update to the draft DCO [REP3-063], THC request that Requirement 18 of the draft DCO is amended to require that owners of land affected by the works to which the oCoCP relates are consulted on the oCoCP before it is submitted to and approved by the relevant planning authority.

ExQ2	Question to:	Question:	Response:
		consultation with LCC only. The ExA understands that the applicant's intention is that the SMP will no longer form part of the CoCP as originally proposed. However, the oCoCP appears to contradict this, including reference to the SMP within table 1.1 of the oCoCP. The ExA also notes comments from NE [REP3-066] and the EA [REP3-064] requesting amendments to the dDCO to ensure that they are consulted prior to approval of the SMP. **To the applicant:** • Given the inter-relationship between the oSMP and oOLP, please explain the rationale behind the separate requirements and associated consultees for the approval of the SMP and OLP. • Submit revisions to the documents, as appropriate, to provide clarity and consistency. **To LCC and the local planning authorities:** • Please provide comments on the above as necessary.	
Q2 LU 1.12	Environment Agency (EA)Lincolnshire County Council (LCC)	**Climate change, increased rainfall and soil impacts** At Issue Specific Hearing 3 [REP3-051], the ExA sought clarification from the applicant regarding the possible effects of increased peak rain fall intensity due to climate change on earth movement and subsidence. In response the	Paragraph 22 of the Clarification Note on Climate Change, Increased Rainfall & Soil Impacts [REP3-055] (the "**Clarification Note**") states that soil stability will not be impacted by a 25% uplift in rainfall, as soils are saturated in any event. This takes no account of increased rainfall intensity and increased rainfall event frequency.

ExQ2	Question to:	Question:	Response:
		applicant has provided a clarification note regarding Climate Change, Increased Rainfall & Soil Impacts [REP3-055]. Please provide comments on the assumptions and conclusions made in the clarification note.	Increased rainfall intensity will lead to a greater physical impact on the soil surface. In turn, this will lead to a collapsed soil surface structure, broken by raindrop impact, which is impermeable to water, and air, leading to impaired plant growth. When a soil is fully saturated, there is added risk of severe structural collapse to a greater depth, exacerbating the situation above. Soil is structurally weak when wet. After rain ceases, drainage commences, and the surface horizon is the first to become less saturated. Being drier, and mechanically stronger as a result, the soil is more resilient to damage. This is the reason effective drainage is critical. At paragraph 10, the Clarification Note states that: "*Field capacity refers to the amount of soil moisture or water content held in the soil after excess water has drained away and the rate of downward movement has decreased, typically occurring two to three days after rain or irrigation in soils with uniform structure and texture"* Consequently, soil strength and resilience improve quickly after rain, provided that drainage systems are effective.

ExQ2	Question to:	Question:	Response:
			Increasing frequency of rainfall events will reduce the time when soil surface horizons are less vulnerable to damage i.e. there is less time for these horizons to de-saturate between rain events. Consequently, increases in both intensity, and frequency of rainfall will increase risk of structural degradation. Both are driven by climate change. Paragraph 23 of the Clarification Note states that land is relatively flat, and less prone to run-off into watercourses. Surface water movement to low spots within fields is still a significant factor however. The resulting waterlogging is addressed by digging channels as outlined in . paragraph 4.2.5 of THC's Written Representations [REP1-050**]** Increased levels of rainfall will increase the amount of surface water movement, and therefore increase slumping (collapsing) risk in such areas.
SE Socio-economic Effects			
Q2 SE 1.1	Relevant Interested Parties (IPs) Lincolnshire County Council (LCC) The applicant	**Economic impact on agricultural operations** Explain and quantify in the context of a local, regional and national scale, the likely economic impacts on agricultural operations from the proposed development, including but not limited	As explained in THC's Written Representation [REP1-050], THC is a leading producer of high-end Brassica vegetables and supplies approximately 20% of the Brassica vegetables sold in the UK. THC has an annual turnover of approximately £90 million currently, and is expected to achieve an annual turnover of circa

ExQ2	Question to:	Question:	Response:
		to, land severance, dust contamination and crop quality.	£100 million within the next three years, and currently employs over 650 members of staff in the region. As such, THC is a significant contributor to the local, regional and national economy and to the security of the UK's food supply. THC is diversifying its product base into semi-prepared vegetable products such as its "Firepit Purple Sprouting Broccoli" (Purple Sprouting Broccoli with a soy glaze dressing in a sachet), which achieve a higher level of profit. That diversification, coupled with increases in wholesale prices, is resulting in sustained increases in turnover for THC. If, as a result of the project, THC was not able to produce the current volume of vegetables, and to its customers' exacting standards, there would be an existential threat to the continuation of its business and significant consequential adverse impacts, including job losses within THC itself and its supplier businesses, resulting in a reduction in employee income being pumped back into the local economy. There would also be food security implications for the region and wider UK, as it would not be possible for the volume of vegetables produced by THC and its suppliers to be easily and cost effectively sourced from elsewhere. A large proportion of the land THC currently farms is required for the onshore ECC itself 145 acres, with a further 57 being rendered unfarmable due to severance.

ExQ2	Question to:	Question:	Response:
			If land cannot be accessed, is of insufficient size, or is a difficult shape to allow for practical and economic farming, then it is considered severed. Severance will increase the amount of land that will be rendered unfarmable and unproductive as a result of the scheme, such land being outside of the DCO limits. To maximise economies of scale, THC operates large scale machinery up to a maximum width of 36 meters. However, larger machinery sizes would not be able to effectively cultivate crops in the smaller areas or difficult field shapes that will be created by the Applicant cutting through field parcels. Improper management of severed areas may also result in damage to crops on adjacent land through the potential for dust blow, and greater weed burden from seed being blown from these severed areas. At present, the extent of the severed areas has still not been agreed with the Applicant. Until such time as it is, more accurate figures forecasting the potential crop loss cannot be accurately prepared and appropriately mitigated. In addition to this, and of even greater concern, is the significant amount of land (264 acres) that will be at high risk of dust contamination from construction-related activities. This significant risk is explained in detail in THC's Written Representation [REP1-050] and accompanying Appendix 14, Summary of oral

ExQ2	Question to:	Question:	Response:
			case put at ISH 3 [REP3-060], and response to ExA Q2 LU 1.6. Given the sensitive nature of the supply contracts that THC is maintaining, insufficient or inconsistent crop supplies could have substantial repercussions and severely negatively impact the future viability of the business. The significance of this threat to THC's business cannot be overstated and THC would respectfully request the ExA to include this as a specific Agenda item for ISH 5.

Abbreviations Used	
AEoI	Adverse Effect on Integrity
AQMP	Air Quality Management Plan
AMS	Arboricultural Management Strategy
AMSL	Above Mean Sea Level
ANS	Artificial Nesting Structure
Art	Article
ALC	Agricultural Land Classification
BAEF	Boston Alternative Energy Facility
BBC	Boston Borough Council
BNG	Biodiversity Net Gain
BoR	Book of Reference

BMV	Best and Most Versatile
CA	Compulsory Acquisition
CAA	Civil Aviation Authority
CEMP	Construction Environmental Management Plan
CIC	Cable Installation Compound
CNP	Critical National Priority
CoCP	Code of Construction Practice
CoS	UK Chamber of Shipping
DCO	Development Consent Order
dDCO	Draft Development Consent Order
DEFRA	Department for Environment Food and Rural Affairs
DML	Deemed Marine Licence
DIO	Defence Infrastructure Organisation
EA	Environment Agency
ECC	Export Cable Corridor
EMP	Ecological Management Plan
EIA	Environmental Impact Assessment
EIFCA	Eastern Inshore Fisheries and Conservation Authority
EL	Examination Library
ELDC	East Lindsey District Council
ES	Environmental Statement
ExA	Examining Authority
EM	Explanatory Memorandum

GLIVIA	Guidelines for Landscape and Visual Impact Assessment
GW	Gigawatt
HGV	Heavy Goods Vehicle
HDD	Horizontal Directional Drilling
HRA	Habitats Regulations Assessment
ICNIRP	International Commission for Non-Ionizing Radiation Protection
IDB	Internal Drainage Board
IDRBNR	Inner Dowsing Race Bank North Ridge
IP	Interested Parties
iPCoD	Interim Population Consequences of Disturbance
JNCC	Joint Nature Conservation Committee
LAT	Lowest Astronomical Tide
LCA	Landscape Character Areas
LCC	Lincolnshire County Council
LMP	Landscape Management Plan
LWT	Lincolnshire Wildlife Trust
LIR	Local Impact Report
LNRS	Local Nature Recovery Strategy
LPA	Local Planning Authority
MCA	Maritime and Coastguard Agency
MMMP	Marine Mammal Mitigation Protocol
MMO	Marine Management Organisation
MOD	Ministry of Defence

MRF	Marine Recovery Fund
NAS	Noise Abatement Systems
NE	Natural England
NFFO	National Federation of Fishermen's Organisations
NGET	National Grid Electricity Transmission Plc
NGSS	National Grid Substation
NPS	National Policy Statement
NRA	Navigational Risk Assessment
NSIP	Nationally Significant Infrastructure Project
OCC	Onshore Cable Corridor
OLEMS	Outline Landscape and Ecological Management Strategy
OLP	Organic Land Protocol
OnSS	Onshore Substation
OP	Offshore Platforms
ORCP	Offshore Reactive Compensation Platform
OTNR	Offshore Transmission Network Review
OWF	Offshore Wind Farm
PADSS	Principal Areas of Disagreement Summary Statement
PPEIRP	Pollution Prevention and Emergency Incident Response Plan
PRoW	Public Right(s) of Way
PSR	Primary Surveillance Radar
R	Requirement
RR	Relevant Representation

RSPB	The Royal Society for the Protection of Birds
RVAA	Residential Visual Amenity Assessment
SAC	Special Areas of Conservation
SHDC	South Holland District Council
SLVIA	Seascape, Landscape and Visual Impact Assessment
SoCG	Statement of Common Ground
SoR	Statement of Reasons
SoS	Secretary of State
SoS DESNZ	Secretary of State for Energy Security and Net Zero
SMP	Soil Management Plan
SSSI	Site of Special Scientific Interest
TCC	Temporary Construction Compound
TP	Temporary Possession
UXO	Unexploded Ordnance
WAM	Wide Area Multilateral
WCS	Worst Case Scenario
WQMMP	Water Quality Management and Mitigation Plan
WMS	Written Ministerial Statement
WTG	Wind Turbine Generator

Appendix 2 - Comments on Outline Code of Construction Practice

Outer Dowsing Offshore Wind

Outline Documents

8.1 Outline Code of Construction Practice

Date: ~~February 2025~~February 2025~~February 2025~~January 2025

~~Deadline~~

Pursuant to APFP Regulation: 5(2)(q)

Rev: 4.0

Company:	**Outer Dowsing Offshore Wind**			Asset:	**Whole Asset**	
Project:	**Whole Wind Farm**			Sub Project/Package:	Whole Asset	
Document Title or Description:	8.1 Outline Code of Construction Practice					
Internal Document Number:	PP1-ODOW-DEV-CS-COD-0001_04			3rd Party Doc No (If applicable):	N/A	
Rev No.	**Date**	**Status / Reason for Issue**	**Author**	**Checked by**	**Reviewed by**	**Approved by**
1.0	March 2024	For DCO Application	Outer Dowsing	[redacted]	Outer Dowsing	Outer Dowsing
2.0	September 2024	Procedural Deadline 19 September	SLR	[redacted]	Outer Dowsing	Outer Dowsing
3.0	November 2024	Deadline 2	SLR	[redacted]	Outer Dowsing	Outer Dowsing
4.0	December 2024	Deadline 3	SLR	[redacted]	Outer Dowsing	Outer Dowsing

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Table 6.1 Management Plans to be produced in accordance with the requirements of the DCO 413837

Field Code Changed

Field Code Changed

Acronyms & Definitions

Abbreviations / Acronyms

Abbreviation / Acronym	Description
ALO	Agricultural Liaison Officer
CCS	Considerate Constructors Scheme
CCTV	Closed Circuit Television
CoCP	Code of Construction Practice
COSHH	Control of Substances Hazardous to Health
DCO	Development Consent Order
ECC	Export Cable Corridor
ECoW	Environmental Clerk of Works
EIA	Environmental Impact Assessment
EMS	Environmental Management System
ES	Environmental Statement
GCN	Great Crested Newt
GIG	Green Investment Group
GT R4 Limited	GT R4 or GT R4 Limited, the incorporated joint venture development Co.
GULF	Gulf Energy Developments
HDD	Horizontal Directional Drill
kV	Kilovolt
MLWS	Mean Low Water Springs
NGSS	National Grid Onshore Substation
NSIP	Nationally Significant Infrastructure Project
ODOW	Outer Dowsing Offshore Wind, trading name of GT R4 Limited
OnSS	Onshore Substation
OSS	Offshore Substation
PLQRA	Preliminary Land Quality Risk Assessment
PPE	Personal Protective Equipment
PPG	Pollution Prevention Guidance
PRoW	Public Right of Way
SCoW	Soil Clerk of Works
SMP	Soil Management Plan
TCC	Temporary Construction Compound
TE	TotalEnergies
TJB	Transition Joint Bay

Terminology

Term	Definition
400kV cables	High-voltage cables linking the OnSS to the NGSS.
400kV cable corridor	The 400kV cable corridor is the area within which the 400kV cables connecting the onshore substation to the NGSS will be situated.
The Applicant	GT R4 Ltd. The Applicant making the application for a DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation, Tota Energies and Gulf Energy Development (GULF)), trading as Outer Dowsing Offshore Wind. The Project is being developed by Corio Generation (a wholly owned Green Investment Group portfolio company), TotalEnergies and GULF.
Cable Circuit	A number of electrical conductors necessary to transmit electricity between two points bundled as one cable or taking the form of separate cables, and may include one or more auxiliary cables (normally fibre optic cables).
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP).
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	The suite of documents that detail the processes and results of the EIA.
Export cables	High voltage cables which transmit power from the Offshore Substations (OSS) to the Onshore Substation (OnSS) via an Offshore Reactive Compensation Platform (ORCP) if required, which may include one or more auxiliary cables (normally fibre optic cables).
Haul Road	The track within the onshore ECC which the construction traffic would use to facilitate construction.
Joint bays	An excavation formed with a buried concrete slab at sufficient depth to enable the jointing of high voltage power cables.
Landfall	The location at the land-sea interface where the offshore export cables and fibre optic cables will come ashore.
Link boxes	Underground metal chamber placed within a plastic and/or concrete pit where the metal sheaths between adjacent export cable sections are connected and earthed.
Mitigation	Mitigation measures are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.

Term	Definition
National Grid Onshore Substation (NGSS)	The National Grid substation and associated enabling works to be developed by the National Grid Electricity Transmission (NGET) into which the Project's 400kV Cables would connect.
Onshore Export Cable Corridor (ECC)	The area within which the export cables running from the landfall to the onshore substation will be situated.
Onshore Infrastructure	The combined name for all onshore infrastructure associated with the Project from landfall to grid connection.
Onshore substation (OnSS)	The Project's onshore HVAC substation, containing electrical equipment, control buildings, lightning protection masts, communications masts, access, fencing and other associated equipment, structures or buildings; to enable connection to the National Grid
Outer Dowsing Offshore Wind (ODOW)	The Project.
Order Limits	The area subject to the application for development consent. The limits shown on the works plans within which the Project may be carried out.
Pre-construction and post-construction	The phases of the Project before and after construction takes place.
The Project	Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure.
Study Area	Area(s) within which environmental impact may occur – to be defined on a receptor-by-receptor basis by the relevant technical specialist.
Transition Joint Bay (TJBs)	The offshore and onshore cable circuits are jointed on the landward side of the sea defences/beach in a Transition Joint Bay (TJB). The TJB is an underground chamber constructed of reinforced concrete which provides a secure and stable environment for the cable.

Reference Documentation

Document Number	Title
6.1.19	ES Chapter 19 Air Quality
6.1.21	ES Chapter 21 Onshore Ecology
6.1.22	ES Chapter 22 Onshore Ornithology
6.1.23	ES Chapter 23 Geology and Ground Conditions
6.1.24	ES Chapter 24 Hydrology and Flood Risk
6.1.25	ES Chapter 25 Land Use
6.1.26	ES Chapter 26 Noise and Vibration
6.1.27	ES Chapter 27 Traffic and Transport
8.1.1	Outline Noise and Vibration Management Plan
8.1.2	Outline Air Quality Management Plan
8.1.3	Outline Soil Management Plan
8.1.4	Outline Pollution Prevention and Emergency Incident Response Plan
8.1.5	Outline Surface Water Drainage Strategy
8.1.6	Outline Site Waste Management Plan
8.10	Outline Landscape and Ecological Management Strategy
8.11	Outline Artificial Lights Emissions Management Plan
8.13	Schedule of Mitigation
8.15	Outline Construction Traffic Management Plan
8.16	Outline Travel Plan
8.17	Outline Public Access Management Plan

1 Introductory Information

1.1 Document Purpose

1. This Outline Code of Construction Practice (CoCP) is part of a suite of documents that support the Development Consent Order (DCO) application submitted by the Applicant for consent to construct and operate the Project.
2. This Outline CoCP sets out the general principles and management measures to be adopted during construction of the Onshore Infrastructure associated with the Project.
3. Prior to submission to the LPA, the final CoCP will be submitted to the Landowner Interest Group (LIG) providing no less than 10 working days for comments to be provided. Comments will be taken on board by the Project and alterations will be made where appropriate.
4. A final CoCP will be produced and submitted to the relevant planning authority for approval prior to construction of the onshore infrastructure and will be in accordance with the principles established in this Outline CoCP. This is secured by Requirement 18 of the draft DCO (document reference 3.1), which states:

> *"(1) No stage of the onshore transmission works may commence until a code of construction practice (which must accord with the outline code of construction practice) for that stage has been submitted to and approved by the relevant planning authority following consultation, as appropriate, with*
>
> *(a) Lincolnshire County Council;*
>
> *(b) the Environment Agency;*
>
> *(c) the relevant statutory nature conservation body;*
>
> *(d) in respect of the surface water drainage strategy referred to in paragraph (2)(b), Anglian Water Services Limited; and,*
>
> *(e) if applicable, the MMO.*
>
> *(2) The code of construction must include—*
>
> *(a) an air quality management plan (which accords with the outline air quality management plan);*
>
> *(b) a surface water drainage strategy (which accords with the outline surface water drainage strategy);*
>
> *(c) a noise and vibration management plan (which accords with the outline noise and vibration management plan); and*
>
> *(d) a health, safety and environment plan;*
>
> *(e) a stakeholder communications plan;*
>
> *(f) a site waste management plan (which accords with the outline site waste management plan);*
>
> *(g) a flood management and response plan;*
>
> *(h) a pollution prevention and emergency incident response plan (which accords with the outline pollution prevention and emergency incident response plan);*
>
> *(i) an artificial light emissions plan; and*

(j) a water quality management and mitigation plan."

(3) Any code of construction practice submitted under sub paragraph 1 may cover one or more of the stages of the onshore transmission works.

(4) All construction works for each stage must be undertaken in accordance with the relevant approved code of construction practice.

5. The final CoCP will provide the mechanism to assure relevant regulatory authorities that environmental impacts associated with the construction of the Onshore Infrastructure will be controlled and mitigated.
6. A Schedule of Mitigation (document reference 8.13) is also provided with the DCO application, which provides a summary of the mitigation identified for the Project including embedded mitigation measures, which have been designed into the project.

1.2 Project Background

7. Outer Dowsing Offshore Wind (hereafter referred to as 'the Project') is a proposed offshore windfarm located approximately 54km off the coast of Lincolnshire, England.
8. GT R4 Limited (trading as Outer Dowsing Offshore Wind) hereafter referred to as the 'Applicant', is proposing to develop the Project. The Project will include both offshore and onshore infrastructure including an offshore generating station (windfarm) located approximately 54km from the Lincolnshire coastline, export cables to landfall, onshore cables, connection to the electricity transmission network, and ancillary and associated development (see Volume 1, Chapter 3: Project Description (document reference 6.1.3) for full details).
9. Details of the onshore elements associated with the Project are set out in Section 5.1 of the Project Description Chapter (document reference 6.1.3).
10. Summary of key onshore elements:
    a. Landfall: where the offshore export cables are brought ashore and joined to the onshore cables in Transition Joint Bays (TJB).
    b. Onshore Export Cables: cables installed within the Onshore Export Cable Corridor (Onshore ECC), including the associated construction works to facilitate the infrastructure installation such as construction compounds, haul roads and construction accesses. Grid Connection: 400 kilovolt (kV) cables connecting the onshore substation (OnSS) to the National Grid substation (NGSS).
    c. Onshore substation (OnSS): will include the necessary electrical components for transforming and converting the power exported through the onshore cables to 400kV and adjusting the power quality and power factor as required to mee the GB NGESO Grid Code which sets out the technical requirements for connecting to and using the National Electricity Transmission System (NETS).
11. Descriptions of the key construction phases related to these elements are outlined in Section 7 (Landfall), Section 8 (Onshore ECC & 400 kV cable corridor) and Section 9 (OnSS) of the Project Description Chapter (document reference 6.1.3).

1.3 Scope

12. The scope of the Outline CoCP is limited to the onshore works only, with offshore activities covered in separate documents.
13. The Outline CoCP sets out the required management measures for all personnel on site to adopt and implement for any onshore construction works for the project and related off-site activities. The appointed Principal Contractor and associated management team will be responsible for implementation of the CoCP provisions, and for ensuring that any subcontractors and visitors are compliant with the requirements.
14. Works and locations within the scope of this document include site preparation works, infrastructure construction, and commissioning phases of the project for onshore works (from Landfall at Wolla Bank at Mean Low Water Springs (MLWS) to the onshore Substation (OnSS) at Surfleet Marsh and onto the National Grid connection point at Weston Marsh which includes:
    - Landfall Horizontal Directional Drill (HDD) and associated Transition Joint Bays (TJBs);
    - Onshore export cables (and ducts) underground installation from the landfall to the OnSS and associated Joint bays and Link boxes;
    - OnSS and onward 400kV cables to the National Grid Onshore Substation (NGSS)
    - Trenchless crossing zones (e.g. Horizontal Directional Drilling (HDD));
    - Construction and operational accesses; and
    - Temporary construction compounds.
15. The term 'construction' in the Outline CoCP includes:
    - material delivery,
    - excavated material disposal,
    - waste removal,
    - all related engineering and construction activities / associated development as assessed in the ES; and
    - reinstatement and demobilisation
16. The majority of the detailed management measures to be captured in the CoCP are set out within the respective outline environmental management plans. These outline plans which are listed in Table 1.1 below have been submitted as part of the application and will be finalised post consent. A summary of the management measures to be implemented within those plans are included within the relevant section of this Outline CoCP. General construction management principles and site operation details are included within this document.

Table 1.1 Outline Environmental Management Plans that are part of the Outline Code of Construction Practice

Document Reference	Title
8.1.1	Outline Noise and Vibration Management Plan
8.1.2	Outline Air Quality Management Plan
8.1.3	Outline Soil Management Plan (SMP)
8.1.4	Outline Pollution Prevention and Emergency Incident Response Plan
8.1.5	Outline Surface Water Drainage Strategy

2 General Principles

2.1 Construction Principles

17. The appointed Principal Contractor and associated management team will be responsible for implementation of the CoCP provisions and for ensuring that all contractors and visitors are compliant with these requirements. The practical implementation arrangements and responsibilities conferred to any subcontractors will be detailed in further management protocols to be developed.
18. The provisions of the Outline CoCP / final CoCP will be incorporated into the contracts for the construction of the project and will be required to be adhered to as a requirement of the DCO.
19. Aims of the Outline CoCP / final CoCP include mitigation of nuisance to the public and to safeguard the environment during construction. Construction activities will be monitored by an Environmental Clerk of Works (ECoW) and a Soil Clerk of Works (SCoW) supported by other specialists as necessary (such as ecological, archaeological and auditing specialists).
20. In addition to the arrangements under this Outline CoCP, the appointed Principal Contractor will be encouraged to register with the Considerate Constructors Scheme (CCS) which is a voluntary code of practice that seeks to:
    - Enhance the appearance of the construction sites;
    - Secure everyone's safety;
    - Respect the community;
    - Care for the workforce; and
    - Protect the environment.
21. Participation in the scheme requires contractors to adhere to the Scheme's Code of Considerate Practice.

2.2 Construction Method Statements

22. Detailed Construction Method Statements will be developed by the Principal Contractor for relevant construction operations. Relevant Construction Method Statements will be included as part of the final CoCP for each phase of the works.
23. Each Construction Method Statement will follow construction industry good practice guidance and adhere to the following:
    - Guidance for Pollution Prevention, which will take precedence where sufficient requirements are not cited under regulations. The Sustainable Drainage System (SuDS) Manual, C753F, CIRIA (2015)
    - Handbook for the Construction of SuDS, C698, CIRIA (2007);
    - CIRIA Handbook C741 Environmental Good Practice on Site;
    - CIRIA Report C532 Control of Water Pollution from Construction Sites;

- CIRIA Report C648 Control of Pollution from Linear Construction Project Technical Guidance;
- Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009);
- Environment Agency's Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention (2001);
- Bat Conservation Trust Bats and Lighting in the UK guidance (2018); and
- British Standard BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites.

2.3 Health and Safety Principles

24. The Applicant's stated aim is to have a safe, secure and incident-free workplace, and contractors are expected to meet or exceed these expectations. Contractors will be required to prepare an Health Safety & Environment (HSE) plan that is specific to their scope of work and is based on their HSE management system in addition to the Applicant's HSE requirements.
25. The HSE Plan shall address all HSE issues that are unique for the scope of work and shall focus on the specific risks and the related controls to eliminate, reduce or mitigate these risks.
26. The Contractor's documented HSE management system, as per ISO 45001 and ISO 14001 standards, shall detail all topics covered by the HSE plan via HSE policies, HSE procedures, HSE forms and all other necessary HSE documentation.
27. The Contractor will also be required to define, document, and communicate with the aid of organisational diagrams the roles, responsibilities, authorities, and accountabilities of all of the Contractor's personnel for site supervision in the HSE plan.
28. The Contractor will be responsible for ensuring all Contractor's (and any subcontractor's) personnel are aware of the requirements of the HSE plan (including all applicable HSE legal and other requirements) and for monitoring and ensuring compliance with these requirements when carrying out the work.
29. The HSE plan for construction work will include, as a minimum:
    - Compliance with laws and regulations (including codes, standards and regulatory requirements);
    - HSE Organisation;
    - Documentation;
    - Risk evaluation and management;
    - Environment;
    - Safeguarding of health;
    - Management of subcontractors;

- HSE incentive and disciplinary systems;
- Competency and training, including inductions;
- Safety culture program;
- Emergency preparedness (including security issues);
- Incident reporting, investigation and lessons learned;
- HSE inspection and audits;
- HSE Improvement plan; and
- Security.

3 Environmental Principles and Management

3.1 Environmental Management System

30. During the construction phases the Applicant will require each Principal Contractor to operate an Environmental Management System (EMS) in compliance with British Standard EN ISO 14001 requirements. The EMS will set out the process for which environmental management is put in place to ensure that relevant mitigation and commitments that have been identified in the ES are addressed during construction.
31. The EMS will set out:
    - Procedures to be implemented to monitor compliance with environmental legislation, pollution prevention and other relevant requirements;
    - Key environmental aspects of the construction works and how they will be managed;
    - Staff competence and training requirements;
    - Record-keeping arrangements; and
    - Monitoring compliance and the effectiveness of measures included within the final CoCP.

3.2 Environmental Principles

32. Chapter 21 of the ES sets out the potential impacts of the Project on biodiversity and nature conservation receptors (excluding birds which are addressed in Chapter 22 of the ES) and the chapter also outlines embedded and additional mitigation measures to reduce potential impacts.
33. All construction works will be carried out in accordance with good practice guidelines and measures committed to in the final CoCP which will include:
    - Pre construction surveys will be undertaken for protected species whose distribution could have changed since the 2022/2023 baseline surveys.
    - Protective fencing will be installed around retained habitats of importance.
    - An Ecological Clerk of Works (ECoW) will be employed to oversee construction works.
    - Biodiversity awareness training will be provided by the ECoW or appropriate specialist to all construction staff.
    - Habitats will be reinstated reasonably practicable following construction. Hedgerows will be reinstated using a species-rich, locally appropriate native mixture including heavy standard trees at a 3:1 ratio for any lost. Older hedgerow saplings will be used to re-establish hedgerows more quickly as well as gap-fill existing hedgerows. All saplings will be planted with appropriate deer protection.

- Prior to vegetation clearance, checks will be carried out for the presence of badger setts, reptiles, amphibians, hedgehogs and other protected species. Additional reasonable avoidance measures will be implemented and mitigation licences applied for where necessary.
- Care must be taken when removing track mats to check for Great Crested Newts (GCN) and limit risks to GCN using the track mat as a habitat during the removal and reinstatement of land.
- Provision will be made for badger access as required for foraging and feeding i.e ensuring fencing allows badgers to pass through or under and excavations include escape mechanisms in relevant construction areas and checks made prior to the commencement of works to ensure no badgers are isolated.
- Hedgerow removal will be undertaken outside of the bird breeding season where reasonably practicable. Where this is not reasonably practicable, the vegetation will be subject to a nesting bird check by a suitably qualified ECoW and if nesting birds are present the vegetation will not be removed until the young have fledged the nest or the nest has failed.
- Bat flight lines will be retained and protected from disturbance during construction through protective fencing to protect hedgerows and trees from damage during construction.

4 Local Community Liaison (Stakeholder Communications Plan)

34. A Stakeholder Communications Plan will be developed as part of the final CoCP.
35. The Applicant will work to keep an open line of communication with residents, businesses, the local community and the emergency services that may be affected by the construction works. Communications will be co-ordinated by a designated member of the Project team. Community engagement will be maintained throughout the construction phase, keeping residents informed of the type and timing of works involved, paying particular attention to activities which may occur in close proximity to receptors. Landowners will be kept up to date of land requirement refinements following detailed design.
36. A combination of communication channels will be employed to keep local residents informed. These could include information boards, social media and parish council meetings.
37. A designated Local Community Liaison Officer (CLO) will be appointed to act as the main focal point with the community. They will be able to provide feedback from the community to the project and will also respond to public concerns, queries or complaints in a professional and diligent manner. The role of the CLO will be specified during the pre-construction phase.
38. A community feedback mechanism (including a grievance procedure) will be put in place for the duration of the construction process. The details of the mechanism will be set out within the Stakeholder Communications Plan. A clear procedure will be outlined, identifying the steps in the process, internal responsibilities, and indicative timeframes for response. Grievances will be logged, investigated and, where appropriate, rectifying action will be taken.
39. Local communities in the relevant areas will be contacted (either directly or via community leaders) in advance of the proposed works to inform them of relevant information such as: indicative details for timetable of works, a schedule of working hours, the extent of the works, and an address and telephone number in case of complaint or query. Enquiries will be dealt with in an expedient and courteous manner.

5 General Site Operations

5.1 Working Hours and Timings of Construction Works

40. Onshore working hours and exceptions to these are specified in Requirement 19 of the draft DCO. Onshore construction activities will normally be carried out between 07.00 hours and 19.00 hours, Monday through Saturday with no Sunday or bank holiday working unless otherwise agreed with the local authority.

41. The onshore works and the related construction traffic movements may take place outside these hours for certain identified works, where agreed in advance with the relevant planning authority, including where agreed in the final CocP and under the following circumstances outlined in the draft DCO, including but not limited to-

a. where continuous periods of construction are required, for works such as concrete pouring and finishing, operation of a trenchless technique, electrical circuit pulling and jointing and testing;
b. the delivery and unloading of abnormal loads;
c. the landfall works;
d. the internal fitting out works associated with the onshore HVAC substation;
e. the testing or commissioning of any electrical plant or cables installed as part of the authorised development; and
f. activity necessary in the instance of an emergency where there is a risk to persons, delivery of electricity or property.

3. With the exception of activities undertaken in accordance with sub paragraph (2)(f) and as provided in paragraph (5) all construction works which are to be undertaken outside the hours specified in paragraph (1) must be agreed in advance with the relevant planning authority.

4. In respect of trenchless techniques—

a. where continuous 24-hour working is required, the undertaker must notify the relevant planning authority in advance of such works;
b. where a trenchless technique is to take place within 100 metres of an occupied dwelling, the works must take place within the hours specified in paragraph (1) unless otherwise agreed in advance with the resident of that dwelling and notified to the relevant planning authority.

42. The contractor shall notify the relevant planning authority in advance of trenchless operations that require 24 hour working. Where a trenchless technique is to take place within 100m of an occupied dwelling (not including any boundary or garden associated with the dwelling), the works shall occur within the standard construction hours, unless otherwise agreed in advance with the occupier of that dwelling and notified to the relevant planning authority.

~~42.~~43. ODOW will give notice to agricultural occupiers at least 18 months in advance of taking entry for construction of the scheme.

Commented [DJ1]: Vegetable crop producers work closely with retailers to ensure continuity of supply throughout the growing year. A significant lead in time is required to plan for future crop production with the crop rotation agreed at least 18 months before entry to allow time to manage supply to retail as well as ensuring crop rotations and disease risks are managed within the rotation.

5.2 Construction Site Layout and Housekeeping

~~43.~~44. A good housekeeping policy will be applied to the construction areas and Temporary Construction Compounds (TCCs) at all times.

44.45. The following principles will be applied on site:

- Working areas are to be kept in a clean and tidy condition.
- The site compounds will be secured to prevent unauthorised access.
- Open fires will be prohibited at all times.
- All necessary measures will be taken to minimise the risk of fire.
- Adequate welfare facilities will be provided for construction staff.
- Waste from the construction areas will be securely stored and managed.
- Oils and chemicals will be clearly labelled and the site should retain an up to date Control of Substances Hazardous to Health (COSHH) inventory.
- Music shall not be played through speakers on any worksite.
- All site compound areas will be non-smoking/non-vaping. Designated smoking/vaping areas will be designated with suitable facilities provided. These will not be located at the boundary of working areas or adjacent areas deemed sensitive to local residents, construction personnel or visitors.

45.46. The layout of each TCC will be designed post consent and will look to further minimise the environmental and social effects of the compounds in the following ways.

- Where the dimensions of the TCC's final layout is less than the worst case scenario assessed in the ES, the reduction will be used to increase the separation distance from visual receptors, such as residents, walkers, horse riders and road-users, where practicable;
- The spatial arrangement of the TCCs will be designed to reduce the visual influence of the larger and bulkier components through increasing separation distances, locating them outwith principal views from properties and using the screening effect of existing roadside or field boundary vegetation where available; and
- Where agreed by landowners, residents, LCC, and the LPA, seeded soil bunds or solid fencing (e.g. hoarding or other) will be used to create temporary screens for residents overlooking a TCC.

5.3 Site Induction

46.47. A site induction shall be required for all attendees, including for visitors, to ensure that inductees are familiar with the following:

- Training and competency requirements, and rules for site visitors
- Health, safety and environmental policy
- Land management and sensitivities
- Risks and hazards
- Boundaries and demarcations

- Traffic management, routes and segregation
- Access and egress
- Personal protective clothing, minimum requirements and awareness of additional requirements for specific types of work
- Emergency procedures and alarms, including for First Aid and fire
- Fire prevention and good practice
- Site attendance and security
- Permit to Work procedures
- Method Statements / Risk Assessments
- Site principal contacts
- Accident and incident reporting
- Site housekeeping
- Material storage
- COSHH
- Welfare facilities and rules of use
- Smoking, drugs and alcohol
- Impressed voltage awareness
- Importance of water quality, location of watercourses and the pollution prevention measures.

5.3.1 Requirements for Site Workers

~~47.~~48. The Site Manager will request, check and obtain records of training, qualification and competence of all individuals who are to be carrying out work activities on site.

5.3.2 Requirements for Visitors

~~48.~~49. All visitors shall be expected to remain on site personnel access routes, without deviation onto vehicle paths, construction areas or storage/stockage areas unless accompanied by a member of the site management team.

5.4 Site Security

~~49.~~50. Adequate security will be provided by the Principal Contractor to protect both the public and construction personnel, deter theft from or damage to the site and the works and deter unauthorised access to the site. At the OnSS this will include perimeter fencing and closed-circuit television (CCTV). Further details on site security measures will be provided in the final CoCP following a security and vulnerability assessment to be undertaken at a later design stage.

~~50.~~51. All personnel either attending or visiting the site / work place are required to sign both in and out of the site using an attendance register.

~~51.~~52. Personnel who have signed into one construction site do not automatically have the right to enter other construction sites, and shall have access in that particular area of the site in which their work activities are to be carried out. Where access to other sites is required, additional signing in and out of attendance registers may be required. Personnel will not be permitted free access to areas which are not part of the scope of works or part of their duties.

~~52.~~53. All materials will be stored in appropriate locked and secured housings. Chemicals and hazardous substances will be stored as per guidance with appropriate bunding. All vehicles, tools, small plant and equipment will be secured away unless in use.

~~53.~~54. All temporary and permanent working areas of the onshore ECC, compounds and the OnSS site will be clearly demarcated and secured with appropriate fencing. Details of temporary and permanent fencing will be submitted to the relevant planning authority for approval prior to construction and will include fencing along the length of the onshore cable route and works areas. The type of fencing to be used will be dependent on ground conditions and land use along the route. Discrete work areas will be fenced off as required. Fences, walls, ditches and drainage outfalls will be retained along the onshore ECC and landfall where possible. Where it is not reasonably practicable to retain them any damage will be repaired and reinstated as soon as reasonably practicable.

5.5 Welfare Facilities

~~54.~~55. Suitable welfare facilities will be provided for all workers and visitors on site.

~~55.~~56. Main and temporary compounds will be furnished with welfare facilities in adherence to current Construction Design and Management (CDM) Regulations and associated legislative requirements, including toilet, washing facilities, drinking water, changing facilities, and canteen / mess facilities.

~~56.~~57. Welfare facilities along the haul road, particularly in locations that are far from main or temporary compounds, may be furnished with additional facilities. Provision of these additional facilities shall be assessed based on location, size of workforce in the location, and transportation options back to nearby facilities.

5.6 Contaminated Land and Groundwater

~~57.~~58. The Applicant has committed to developing a Contaminated Land and Groundwater Plan as part of the construction documentation. This will include mitigation measures outlined in the relevant ES documents:

- Chapters 23 Geology and Ground Conditions (document reference 6.1.23)
- Appendix 23.1 Preliminary Land Quality Risk Assessment (PLQRA) (document reference 6.3.23.1)

- Chapter 24 Hydrology and Flood Risk (document reference 6.1.24)

~~58.~~59. The ES has included desktop studies for contaminated land and former landfill sites within the wider Study Area, in addition to a search for known pollution incidents and past contaminating uses. The route contains many watercourses as well as groundwater resources which are potential receptors for contaminated groundwater or runoff from contaminated land. These and the sensitivities associated with them are identified in the ES.

~~59.~~60. No known sources of contamination have been identified within the onshore export cable corridor, but a protocol will be developed on a precautionary basis to manage any contamination discovered either during pre-construction ground investigations or during construction which will include:

- Areas where contamination or contaminative materials are found will be photographed and annotated on a site drawing
- Where necessary works on site at the affected location will cease until any identified contamination has been assessed in accordance with the relevant legislation
- Construction workers will follow good site practice and hygiene rules.
- PPE including nitrile gloves, protective overalls, safety googles and face masks will be worn where appropriate especially by workers who are likely to be coming into contact with soil or water i.e. when carrying out hand digging activities.
- Appropriate safe working practices will be adopted that consider the potential for hazardous ground gases ingress and accumulation in confined spaces.

~~60.~~61. Chapter 23 of the ES identified sensitive receptors to ground condition impacts and management and mitigation measures. In order to mitigate the potential impacts associated with excavation of potentially contaminative material, the Contaminated Land and Groundwater Management Plan will implement the following measures outlined in Chapter 23 of the ES:

- Should areas of potential concern occur in close proximity to the onshore Order Limits will be micro-sited where reasonably practicable to maintain a 25m buffer.
- The Contaminated Land and Groundwater Management Plan will identify the procedures to be followed should an area of contamination be encountered. Areas where these materials are found will be photographed and annotated on a site drawing. Where necessary, works on site at that location will cease until any identified contamination has been assessed in accordance with the Part IIA of the EPA and the Contaminated Land (England) Regulations 2006. This assessment will be undertaken by a competent person in accordance with the Land Contamination Risk Management (LCRM) guidance (Environment Agency 2021);
- Construction workers will follow good site practice and hygiene rules.
- Any work scopes with possible interaction with contaminated materials will be risk assessed to identify requirements for Personal Protective Equipment (PPE) to suit the works and this may include nitrile gloves, protective overalls, safety goggles and face masks; and

- Adopt appropriate safe working practices that consider the potential for hazardous ground gases ingress and accumulation in confined spaces. The use of gas protection measures, such as impermeable membranes and ventilation, may be required if any permanent structures are to be in proximity to identified sources of ground gases such as a landfill site.
- All works will be carried out in accordance with BS5930: 2015 (The Code of Practice for Site Investigations) and BS10175:20Investigation of Potentially Contaminated Sites).

5.7 Site and Excavated Waste Management

~~61.~~62. All places of work shall be kept clean and tidy, and waste will not be accumulated on site. All surplus material and waste are to be removed in a timely manner. An Outline Site Waste Management Plan (SWMP) (document reference 8.1.6) has been provided to monitor waste arisings and ensure that relevant legislation and duty of care are being complied with.

~~62.~~63. The bulk of soil arisings will include topsoil and subsoil from the enabling and landscape works and will be classified as non-hazardous soil. These wastes and excess soils will be reused wherever practicable onsite. Imported soils will not be utilised except where unavoidable.

~~63.~~64. Any wastes found to be hazardous will be stockpiled or stored separately from any non-hazardous stockpiles. Appropriate action will be taken in accordance with the Hazardous Waste (England and Wales) Regulations 2005; and

~~64.~~65. Use of the SWMP to monitor waste arisings and ensure adherence to duty of care and waste legislation on site and the anticipation of sustainable waste management practices by maximising waste prevention, reuse and recycling for material destined for offsite waste management. This will actively discourage sending waste to landfill.

5.7.1 Storage

~~65.~~66. Suitable receptacles shall be provided at suitable points on the construction site for the collection of waste. Substances designated as "hazardous waste" will be kept separate and will be handled by a suitably registered carrier for disposal at a suitably licensed site/facility**.** Each of the waste containers, covered skips or larger skips (e.g. for wood waste) will be clearly marked to describe the wastes that will be accepted within it. A site plan will be produced and displayed to show the areas of the site where wastes will be accepted for disposal. A security protocol shall be established to prohibit access to hazardous wastes. ‘Hazardous waste’ means any waste that contains properties that might make it harmful to human health or the environment.

~~66.~~67. Waste shall be segregated as far as reasonably practicable and shall be kept safe. Wherever reasonably practical materials shall be recycled to reduce the amount disposed to landfill sites.

~~67.~~68. The Principal Contractor and their Contractors will not burn any waste on-site during the works. Where possible all unused materials will be sent back to supplier. The Principal Contractor shall ensure the prohibition of improper discharge of waste into water bodies.

~~68.~~69. Any company removing waste from site shall demonstrate that the destination receiving facility is licensed to accept the type and volume of material.

5.8 Flood Management

~~69.~~70. Chapter 24 Hydrology and Flood Risk and its associated appendices identify the potential flood risks associated with the Project and outlines embedded and additional mitigation measures to reduce potential impacts.

~~70.~~71. A Flood Management and Response Plan will be produced setting out actions to be taken in the event of flooding or a flood warning during construction work. This will include site management measures, including a procedure for securing sensitive equipment and/or relocating materials stored in bulk or likely to cause pollution. The emergency response aspect of the plan will include communication processes, and a procedure for site evacuation.

~~71.~~72. This plan will reflect the Flood Risk Assessments for the ECC and OnSS (document reference 6.3.24.2 and 6.3.24.3).

~~72.~~73. The Environment Agency or IDB as appropriate will be notified if damage occurs to any main river, related flood defence infrastructure, or ordinary watercourse.

~~73.~~74. All construction work will be undertaken in accordance with good practice guidance, including but not limited to:

- Control of Water Pollution from Construction Sites – Guidance for Consultants and Contractors CIRIA (C532) (CIRIA 2001);
- CIRIA – SuDS Manual (C753) (CIRIA, 2015b);
- No discharge to Main River watercourses will occur without permission from Environment Agency (SuDS Manual);
- No discharge to IDB maintained watercourses will occur without permission from the relevant IDB;
- Wheel washers and dust suppression measures to be used as appropriate to prevent the migration of pollutants (SuDS Manual);
- Regular cleaning of roads of any construction waste and dirt to be carried out (SuDS Manual); and
- A construction method statement to be submitted for approval by the responsible authority (SuDS Manual).
- During HDD works undertaken at landfall the landfall drill site will be temporarily bunded to the 0.5% probability level specified by the EA, to minimise flood risk.

5.9 Trenching and Trenchless Techniques for Cable Installation

~~74.~~75. Trenching will be the primary cable installation methodology along the ECC, with trenchless techniques being employed where necessary for crossing obstructions, including roads, railway lines and watercourses.

75.76. During the construction of cable trenches, upper and lower topsoil (where present) will be stripped and the upper and lower subsoil (where present) will be excavated from the trench and ~~both~~ all will be stored separately on site within the temporary working width in separate stockpiles as detailed in the Soil Management Plan (document 8.1.3).

76.77. The trenches will be excavated using a mechanical excavator or similar (such as a continuous trencher), and the cable ducts will be installed into the open trench directly from a specialised delivery vehicle. The ducts will be encased in a material, such as cement bound sand (CBS). Once the cable ducts are installed, the trenches will be backfilled in stages using the same subsoil excavated from the trench. Following installation and suitable completion of a section of duct installation, the stored topsoil will be reinstated across the trenches in line with the SMP, with the exception of the haul road, which will need to be retained for the duration of the cable duct and export cable installation.

77.78. HDD (horizontal directional drilling) or other trenchless techniques will be undertaken for all major crossings including main rivers, flood defences and IDB owned and managed ordinary watercourses, most roads, remains of national importance and all railway lines.

78.79. HDD will also be utilised for the landfall drill to avoid interaction with surface features by installing ducts under the intertidal area to exit pits which will be located a minimum of 500m offshore from MLWS. The HDD will be of sufficient depth to have no effect on the beach. The landfall involves installing cables under the dunes which form the sea defence, and the drill site design will include temporary bunding during this operation, to protect against the potential for ingress of water into the drill cavity during drilling.

79.80. The construction compounds on either side of crossings, where the trenchless entry and exit works will take place (referred to as Cable Installation Compounds (CIC)) will be securely fenced in line with the requirements of the Fencing Plan.

80.81. The Onshore Pollution Prevention and Emergency Incident Response Plan (PPEIRP document 8.1.4) will consider the specific nature of HDD works and include a plan to address the accidental release of drilling mud (bentonite).

81.82. Procedures followed for cable installation by trenching and HDD will be in line with best practice and the final CoCP will be developed by the contractor to reflect the actual construction methodology and site-specific arrangements.

5.10 Watercourse Crossings

82.83. The ECC crosses a large number of watercourses where cable installation will be required, and temporary haul road crossings will be installed.

83.84. The watercourses fall into the following categories:

- Main Rivers. These are managed by the Environment Agency (EA) and can include flood defences.
- Tidal main rivers, two are required, both including defences.

Commented [PW2]: The Soil Management Plan has been amended to include upper and lower horizons

Commented [PW3]: The reasoning behind this is outlined in the oSMP markup. Specifically:
THC's response to ExQ1 LU 1.12 highlighted the presence of multiple **topsoil** horizons (in fields on the cable route). Both upper and lower horizons in the topsoil (where present) need to be identified. These horizons then must be segregated throughout the construction process, including stripping, storage, and reinstatement. This ensures the reinstated profile, where it includes multiple horizons in either the topsoil or subsoil, replicates the profile beforehand, and also replicates the profile in areas adjacent to the construction corridor. In turn, this provides a consistent soil profile, across the entire field. This is then capable of delivering consistent crop marketable yield. If multiple layers of differing soil quality were present in the topsoil, for example, and not segregated, then after reinstatement the resulting mix of 2 layers would have different characteristics (due to mixing) and therefore give a different environment for crops to grow in. The consequence would be differential crop growth and ripening compared to adjacent, untouched areas in the field.

- Ordinary watercourses, comprising:
  - Internal Drainage Board (IDB) owned or maintained drains. The IDBs own and manage this system of drains and pumping stations.
  - Riparian drains, owned and maintained by the landowner.

~~84.~~85. ODOW has committed to using trenchless techniques for installing cables at all main rivers and IDB owned or maintained drains. For riparian drains open cut installation is an option and this will be determined at the detailed design stage and would be subject to agreement with the landowner and approval of the methodology by the IDB.

~~85.~~86. The basic parameters for trenchless crossings are based on EA and IDB requirements, which are summarised below:

- Trenchless crossing minimum depth below hard bed level = 2m (EA), 2.5m (IDB) 1.5m (Riparian)
- Lateral extension of crossing depth beyond the channel = 2-5m (to be confirmed with the relevant authority for specific situations)
- Minimum offset distance for entry / exit pits either side of the channel =
  - 9m (main rivers and defences, IDB owned / maintained drains),
  - 16m (tidal rivers & defences)

~~86.~~87. For open cut crossings, where this is proposed at riparian drains, the basic parameters will be that the cables will be installed beneath a protective tile (or strike plate) laid at a minimum depth of 1.2m below the hard bed level.

~~87.~~88. Method statements for open cut installation will be developed and agreed with the relevant IDB, including the following principles, with final details to be accepted by the IDB at the pre-construction stage:

- Watercourses will be dammed on either side for the duct installation period.
- The flow will be maintained by pumping or other methods to be agreed.
- Excavated material will be separated and reinstated in the order removed.
- Reinstatement will take place as soon as possible after duct installation.

~~88.~~89. Where the ECC crosses a main river or defence, this will be achieved either by using an existing bridge or installing a temporary one.

~~89.~~90. Larger drains may also require temporary bridges, but temporary culverting will be the preferred method of crossing most drains, subject to approval by the IDB.

~~90.~~91. The final CoCP will develop the generic methodologies for crossing watercourses for approval by the relevant authorities prior to the pre-construction approval of details stipulated in the DCO requirements. Relevant mitigation measures for watercourse crossings will be combined and incorporated into the methodologies within the final CoCP.

5.11 Pollution Prevention and Emergency Responses

~~91.~~92. All onshore construction work will be undertaken in accordance with the Pollution Prevention and Emergency Incident Response Plan, which will be drafted in compliance with the Outline Pollution Prevention and Emergency Incident Response Plan annexed as part of this Outline CoCP. This will include but not be limited to the following measures:

- Areas at risk of spillage such as vehicle maintenance areas and hazardous substance stores, including fuels, oils and chemicals, will be bunded and carefully sited to minimise the risk of hazardous substances entering the drainage systems or local watercourses.
- The bunded areas will have impermeable bases to limit the potential for migration of contaminants into ground water following any leakage/spillage.
- Bunds used to store fuels and oils will have adequate spare capacity to eliminate the risk of overflow.
- All fuel and chemical storage will comply with relevant storage regulations.
- Any refuelling of machinery will be undertaken following a specific refuelling protocol, including requirements for spill kits, spillage containment, safe removal and treatment. Refuelling of machinery will be undertaken within designated areas where spillages can be easily contained.
- Machinery will be routinely checked to ensure it is in good working condition to reduce the risk of leaks.
- Any tanks and associated pipe work containing oils and fuels will be double skinned and will be provided with intermediate leak detection equipment.
- A spill procedure will be documented, and spill kits kept in the vicinity of potentially hazardous materials storage areas.
- Disturbance to areas close to watercourses will be reduced to the minimum necessary for the work.
- Excavated material will be placed in such a way as to avoid any disturbance of areas close to the banks of watercourses and to prevent spillage into water features.
- Use of sediment fences along watercourses when working in close proximity to prevent sediment being washed into watercourses.
- Covers will be used by lorries transporting materials to/ from site to prevent releases of dust/ sediment to watercourses or drains.
- Where reasonably practicable storage of stockpiled materials will be on an impermeable surface to prevent leaching of contaminants and will be covered when not in use to prevent materials being dispersed by wind or rainfall runoff.

- Measures to control run off i.e. sediment fences, containment of storage areas and treatment of any run off will be utilised to prevent the potential reduction in water quality associated with increased sediment.
- Any visual/ olfactory signs of contamination encountered during excavation should be reported and investigated.
- A briefing will be included within the site induction highlighting the importance of water quality, the location of watercourses and pollution prevention measures.

~~92.~~93. Drainage works will be constructed in accordance with relevant statutory guidance and in accordance with any approved plans or methodologies.

~~93.~~94. The final Pollution Prevention and Emergency Incident Response Plan will include a Frac-out Management Plan which will set out a risk assessment for frac-outs and outline potential emergency accesses in the event of a frac-out.

~~94.~~95. The Frac-out Management Plan will include management measures to minimise the likelihood of unplanned release of drilling fluid including:

- Measures to ensure drilling stops once a break out is reported
- Measure to contain the breakout
- Measures to remove the released fluid if a significant volume of material is contained

5.12 Soil and Organic Soil Management and Separation

~~95.~~96. Chapters 23 and 25 of the ES identify the soil resource potentially affected by the project. There is the potential for over compaction of agricultural and amenity soils, structural deterioration of soil materials, erosion and loss of soils and homogenisation and loss of characteristic horizons during the construction process. Measures will be implemented on site to minimise any effects.

~~96.~~97. An Outline Soil Management Plan has been produced which sets out site specific mitigation measures and best practice techniques to be followed by the contractors. The Soil Management Plan will include:

- Use of the waste hierarchy to determine the most sustainable option for all surplus soils that are generated on site;
- Inclusion of excavated subsoil that is suitable for use within the design as landscaping material at the OnSS to minimise offsite movements;
- Identification of suitable local schemes that are suitable for offsite reuse or recycling of surplus subsoil;
- Topsoil stripping within all construction areas
- Separate storage of topsoil and excavated materials to prevent mixing of sub soil and topsoil. Where multiple horizons exist in either the topsoil or subsoil, storage of these is to be also kept separate,

- Soil storage and sealing methods
- Minimising the excavation footprints
- Protocols for works in wet weather
- Weed control on soil and subsoil bunds
- Provision of a Soil Clerk of Works (SCoW)
- Pre-construction soil survey

~~97.~~98. Running sands and specialist soils that may be present will be handled in accordance with the principles and protocols outlined in the Soil Management Plan

~~98.~~99. Full and comprehensive photographic and date stamped Schedules of Condition will be undertaken by the Applicant prior to any surveys, access or enabling works being undertaken. The Applicant will also undertake pre-construction soil surveys with a minimum of 1 per field or every 100m, or according to the SMP (section 2.4, paragraph 17) and including full nutrient analysis.

~~99.~~100. The Applicant will appoint an Agricultural Liaison Officer (ALO) prior to the commencement of construction works. The scope of works for the ALO will include but is not limited to:

- Arranging meetings with landowners, occupiers or their agents where considered necessary.
- Undertaking pre-construction liaison with landowners to minimise disruption where possible, to existing farming regimes and timings of activities.
- Undertaking site inspections during construction to monitor working practices including the implementation of soil handling methodologies as per the Outline SMP
- Discussing and agreeing reinstatement measures with landowners following the completion of construction works.

~~100.~~101. The Applicant will appoint a Soil Clerk of Works to oversee the onshore construction works. The Soil Clerk of Works will be engaged in discussions as to any appropriate technology to be implemented to ensure works are not carried out in weather that could be detrimental to the condition of the agricultural fields affected.

~~101.~~102. The Applicant will follow best practice guidelines and measures set out by Defra or similar to avoid cross contamination between non-organic and organic fields. These will be outlined in the final Soil Management Plan. Non-intrusive works will be carried out in accordance with a protocol agreed with the relevant landowners.

~~102.~~103. All onshore temporary working areas or compounds will be reinstated once construction is complete.

5.13 Organic Land

~~103.~~104. Fields subject to organic land status will in addition to the CoCP and SMP be subject to an Organic Land Protocol, which will accord with the Outline Organic Land Protocol appended.

5.14 Severed Land

~~104.~~105. The Applicant will liaise with landowners and tenants to mutually agree areas that are not practical to farm due to restrictions on size and shape. The Applicant will compensate the landowner and/or tenant for any losses associated with this severed land.

~~105.~~106. The Applicant will liaise with landowners and tenants to agree a management plan for the severed areas which will determine who will manage the areas and how. This could include leaving the area fallow or planting with an agreed cover crop.

107. Where required and practicable crossing points will be agreed between the contractor and landowner to access the retained areas of the farm ~~that are still farmable~~. These crossing points will be mutually agreed between parties to minimise disruption on the landholdings not withstanding practical and safety matters associated with installing the cables.

~~106.~~108. In the event of dispute regarding the matters to be agreed in paragraphs 104, 105 and 106, the point in dispute shall be referred to an independent RICS surveyor with at least 10 years experience ("Expert"). The costs of such reference/appointment shall be borne by the Applicant and the Expert's decision shall be final and binding on the Applicant and the landowner in question.

Commented [DJ4]: Access required to all retained areas regardless of whether they are farmable. This is to ensure that the owner/occupier can access the land to ensure it is maintained in good environmental and farmable condition to include, but not limited to, the control of weed growth on severed areas.

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5.15 Agricultural Drainage and Irrigation

~~107.~~109. The cable shall be installed 300mm below any current drainage system where practical. Refer to the oSMP (5.6) regarding implications for the drainage systems concerned.

~~108.~~110. There is the potential during onshore construction that there could be a temporary impact on field drainage and irrigation systems, as outlined in Chapter 23 of the ES. The Project has contracted a local drainage consultant to collate land drainage plans and design pre and post construction drainage schemes which will allow drainage to be maintained during construction. The pre and post construction drainage schemes will also address the diversion or interruption of any water supplies and the management of irrigation systems.

~~109.~~111. All drainage works will be carried out in accordance with the Surface Water Drainage Strategy which will be drafted in compliance with the Outline Surface Water Drainage Strategy, annexed as part of this outline CoCP. Where pre construction drainage is required the Applicant will implement the following process:

- The Applicant will submit a pre construction drainage report to the landowner and agent for their review and comment.
- The landowner and or their drainage consultant will have ~~2~~30 working days following receipt of the drainage report to confirm if they have any additional requirements. If no response is received within 20 working days then it is deemed the landowner has accepted the drainage report.
- If additional requirements from the landowner and or their drainage consultant are accepted by the Applicant then the drainage report will be updated and reissued to the landowner for approval.
- Upon reasonable request, the landowner and their drainage consultant may be given the opportunity to inspect the drainage works and any reasonable representations will be taken into account by the Applicant.
- In instances where the existing drainage scheme cannot be adequately reinstated, the Applicant may design an alternative drainage scheme over part or the entirety of a field. Such design to be agreed with the landowner.
- Should there be a dispute between the parties then the matter will be referred to expert determination where an independent drainage expert~~,~~ with appropriate experience of the soils concerned, will be appointed by ADAS.

~~110.~~112. Where any post construction drainage is required the Applicant will implement the following process:

- As soon as reasonably practicable following completion of the works the Applicant's drainage contractor will conduct a site meeting with the landowner and agent to carry out an assessment of any impact on the drainage system as a result of the construction works.
- Should any subsequent drainage works be required the Applicant's drainage contractor will consult with the landowner and or the landowner's drainage consultant on the design of any subsequent drainage works and take into account any representations the landowner and or the landowner's drainage consultant might have. The Applicant's drainage contractor will provide a report to the landowner setting out their recommendations in respect of any drainage works required.
- The landowner and or their drainage consultant/agent will have ~~20~~ 30 working days following receipt of the drainage report to confirm if they have any additional requirements. If no response is received within 20 working days then it is deemed the landowner has accepted the drainage report.
- If additional requirements from the landowner and or their drainage consultant are accepted by the Applicant then the drainage report will be updated and reissued to the landowner for approval.
- ~~Upon reasonable request, t~~The landowner and their drainage consultant ~~may~~ will be given the opportunity to inspect the drainage works and any reasonable representations will be taken into account by the Applicant.

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- All connections to existing drainage systems to be photographed and a GPS location recorded. Digital copies to be provided to the landowner
- The Applicant will provide accurate as laid drainage plans to the landowner post construction.
- In instances where the existing drainage scheme cannot be adequately reinstated (see the oSMP section 5.6.66), the Applicant may design an alternative drainage scheme over part or the entirety of a field. Such design to be agreed with the landowner. Should the alternative drainage scheme result in the loss of productive farmland then appropriate compensation shall be paid by the Applicant.
- Should there be a dispute between the parties then the matter will be referred to expert determination where an independent drainage expert, with appropriate experience of the soils concerned, will be appointed by ADAS.

Commented [DJ5]: Accurate plans and locations of all alterations to existing drainage systems is vital when identifying drainage issues in the future. Accurate location records allow failure in drainage connections with old and new schemes to be quickly identified and repaired.

Commented [DJ6]: The ODOW scheme will have significant impact on in situ drainage systems. Any drainage system must have sufficient fall to allow for efficient movement of water away from farmed land and allow for productive farming. It is critical that any post drainage systems installed are of appropriate design to allow for sufficient fall and silt removal.

In some limited circumstances topography will not allow post construction drainage systems to be installed without the construction of additional open drains along field boundaries for land drains to discharge into. In the event that additional open field drains are installed then there will be a loss of productive farm land for which affected parties will require additional compensation.

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5.16 Utility Plant and Crossings

~~111.~~113. The Applicant has consulted with the owners of utility services within the order limits and developed a Crossing Plan and Schedule (document 6.3.3.2). The services within the order limits include:

- Overhead electricity lines (including 400kV transmission lines) where cable installation and construction traffic will pass underneath the lines.
- Buried electricity cables.
- Potable water pipes and pipelines, of various dimensions.
- Foul and combined sewers.
- Gas pipes and pipelines of various sizes and pressures (including 2 'Major Accident Hazard Pipelines')
- Overhead and underground telecommunication cables

~~112.~~114. Protective Provisions are included in the draft DCO, including both bespoke and standard measures to protect the statutory undertaker's plant.

Statutory undertakers have also provided the applicant with both technical guidance and safety requirements.

~~113.~~115. The final CoCP will include the generic arrangements for crossings and work in proximity to utility plant, in addition to specific measures agreed with the utility's plant protection team and the process required through the protective provisions.

~~114.~~116. Guidance documents regarding safe working in the proximity of services include:

- Guidance on excavating near underground services is contained in Health and Safety Executives guidance document HS(G) 47 "Avoiding Danger from Underground Services"

- Cadent's specification for Safe Working in the Vicinity of Cadent High Pressure gas pipelines and associated installations - requirements for third parties GD/SP/SSW22.
- Digsafe leaflet Excavating Safely - Avoiding injury when working near gas pipes
- The relevant guidance in relation to working safely near to existing overhead lines is contained within the Health and Safety Executive's (www.hse.gov.uk) Guidance Note GS 6 "Avoidance of Danger from Overhead Electric Lines"

~~115.~~117. The order limits include the following Major Accident Hazard Pipelines (MAHP), which are high pressure gas pipelines.

- National Grid, 7 Feeder Gosberton/North Level Main Drain, HSE reference 6905, Transco
- InterGen (UK), NTS to Spalding Energy PS Pipeline, HSE reference 11622.

~~116.~~118. The applicant will contact the operators of these MAHPs to review the proposed arrangements for protection of the pipelines, including plant crossings and cable installation. Through consultation, it will also be necessary to establish any additional requirements for risk assessments, site meetings, supervision and safety precautions relating to these pipelines, which will be documented in the final CoCP.

5.17 Artificial Light Emissions Management

~~117.~~119. An Artificial Light Emissions Management Plan will be prepared and submitted for approval prior to construction which will address the control of artificial light from temporary construction activities only.

~~118.~~120. Details of the proposed operational lighting at the onshore substation are outlined in the Outline Operational Artificial Light Emissions Plan.

~~119.~~121. The plan will detail the mitigation measures to be taken to manage emissions from artificial light in accordance with Bats and Lighting in the UK guidance (Bat Conservation Trust, 2018), such as the use of directional beams, non-reflective surfaces and barriers and screens, to avoid light nuisance whilst maintaining safety and security obligations. The plan will also consider the guidance from the Institute of Lighting Professionals (Guidance Note 01/21) in situations where this is relevant.

~~120.~~122. Details of the locations, heights, design and luminance of all floodlighting to be used during the construction of the project, together with measures to limit obtrusive glare to nearby residential properties, will be set out in the Artificial Light Emissions Management Plan which will be submitted to the relevant planning authority for approval prior to construction commencing.

~~121.~~123. Site lighting will be positioned and directed to minimise nuisance to footpath users and residents, to minimise distractions to passing drivers on adjoining public highways and to minimise skyglow, so far as reasonably practicable. Lighting spillage will also avoid or minimise impacts on ecological resources, including nocturnal species. So far as is practicable, all power to temporary lighting will be taken from mains supplies rather than from portable generators. Where portable generators are used, industry best practice will be followed to minimise noise and pollution from such generators.

~~122.~~124. With regard to working hours and timing of works, perimeter and site lighting would be required during working hours and a minimum level of lighting would remain overnight for security purposes. .

~~123.~~125. During periods of 24 hour working for HDD and other continuous operations, temporary night-time lighting for specific task areas will be required and will be designed to minimise the impacts at the specific location.

5.18 Noise & Vibration Management

~~124.~~126. Chapter 26 of the ES outlines the potential impacts of the Project on onshore noise and vibration. The impact of construction noise has been assessed with reference to British Standard 5228-1 and compliance with this standard is expected as a minimum standard.

~~125.~~127. The Applicant aims to control and limit noise and vibration levels during the construction phases so far as is reasonably practicable to minimise impacts on sensitive receptors.

~~126.~~128. The Outline Noise and Vibration Management Plan annexed as part of this Outline CoCP sets out the noise and environmental management techniques which, subject to the final design of the Project, may be implemented by the Applicant and its contractors during the construction of its onshore works. This may include:

- Localised acoustic screening
- Fitting more efficient exhaust sound reduction equipment to earth moving plant
- Enclose breakers and rock drills in portable or fixed acoustic enclosures with suitable ventilation
- Use rotary drills and boring plant inside acoustic shed with acoustic ventilation
- Reduction of simultaneous use of plant
- Re positioning plant as far away from receptors as reasonably practicable
- Not using particularly noisy items of plant pieces at night as far as reasonably practicable

5.19 Air Quality Management

~~127.~~129. Chapter 19 Air Quality, of the ES (document reference 6.1.19) identifies receptors that may be potentially sensitive to air and dust emissions.

~~128.~~130. Following the outcomes of the construction dust assessment included within Chapter 19 of the ES a number of mitigation and management measures have been identified which are outlined in the Outline Air Quality Management Plan annexed as part of this Outline CoCP. These will include undertaking construction works in accordance with best practice measures that are proportional to the likely impacts, including those relating to dust. Dust mitigation measures have been identified by the applied IAQM methodology. These will include:

- Implementation of a Dust Management Plan which will contain controls to minimise or remove impacts
- Storage of sand and other aggregates in bunded areas and ensuring these are not allowed to dry out unless required for a particular process
- Ensuring bulk cement and other fine powder materials are delivered in enclosed tankers and stored with suitable emission control systems to prevent the escape of material during delivery

5.20 Public Rights of Way and Public Access Management Plan

~~129.~~131. A number of public rights of way (PRoWs) which will be impacted during the construction phase of the Project have been identified in Chapter 27 Traffic and Transport and are shown on the Public Rights of Way Plan (document reference 2.10).

~~130.~~132. Prior to any stopping up or localised diversion of PRoW the Principal Contractors will set out measures in a detailed Public Access Management Plan which will be submitted to the relevant highway authority for approval and which will be in accordance with the Outline Public Access Management Plan (document reference 8.15) submitted as part of the Applicant's DCO application. This will include temporary management principles and temporary management measures applicable to the closure or diversion of each PRoW.

5.21 Water Quality Management and Mitigation Plan

~~131.~~133. A Water Quality Management and Mitigation Plan will be prepared and submitted for approval prior to construction which will set out the methods to monitor and control changes to the quality and quantity of groundwater and surface water which could be impacted during the construction phase of the Project.

~~132.~~134. Prior to producing the plan, the Groundwater Risk Assessment (document reference 6.3.24.1, APP-210) submitted as part of the applicant's DCO application will be updated in the pre-construction phase and used to inform the scope of the plan and will be appended to it and be submitted for approval as part of the plan.

~~133.~~135. The plan will detail the monitoring that will be undertaken, including the methods, locations, and frequency to be adopted. It is anticipated that monitoring will include the installation of groundwater boreholes which can be used to monitor both water depth and water quality on a regular, agreed basis, at sites agreed with the appropriate statutory bodies.

~~134.~~136. The plan will include:

- baseline monitoring to be undertaken prior to construction;
- construction phase monitoring and reporting; and
- post construction monitoring and reporting.

~~135.~~137. Monitoring of water quality will include regular extractive sampling of water at monitoring locations for laboratory analysis and more frequent field checks by the ECoW during the construction phase.

~~136.~~138. The water quality monitoring will:

- Build an understanding of the existing baseline conditions in surface water and groundwater features within and/or downstream of the onshore order limits;
- Inform the specification for monitoring during construction and post construction;
- Provide a record of water quality across the site that can be compared to rainfall and site activities; and
- Provide reassurance of the performance of the pollution prevention procedures installed to prevent contamination of surface water and groundwater throughout the construction period.

~~137.~~139. The Water Quality Management and Mitigation Plan will provide the information required to recognise a pollution incident, should one occur and will also detail the mitigation measures that should be followed in the event that monitoring identifies any impacts during construction.

6 CoCP and Management Plans

~~138.~~140. Requirement 18 of the draft DCO secures that:

"(1) No stage of the onshore transmission works may commence until a code of construction practice (which must accord with the outline code of construction practice) for that stage has been submitted to and approved by the relevant planning authority following consultation, as appropriate, with

(a) Lincolnshire County Council;

(b) the Environment Agency;

(c) the relevant statutory nature conservation body

(d) in respect of the surface water drainage strategy referred to in paragraph (2)(b), Anglian Water Services Limited; and

(e) if applicable, the MMO.

(2) The code of construction must include—

(a) an air quality management plan (which accords with the outline air quality management plan);

(b) a surface water drainage strategy (which accords with the outline surface water drainage strategy);

(c) a noise and vibration management plan (which accords with the outline noise and vibration management plan); and

(d) a health, safety and environment plan;

(e) a stakeholder communications plan;

(f) a site waste management plan (which accords with the outline site waste management plan);"

(g) a flood management and response plan;

(h) a pollution prevention and emergency incident response plan (which accords with the outline pollution prevention and emergency incident response plan);

(i) an artificial light emissions plan; and

(j) a water quality management and mitigation plan.

(3) Any code of construction practice submitted under sub paragraph 1 may cover one or more of the stages of the onshore transmission works.

(4) All construction works for each stage must be undertaken in accordance with the relevant approved code of construction practice.

~~139.~~141. In addition to the final CoCP, the following management plans will be produced in accordance with the requirements of the DCO and will be read and implemented in conjunction with the final CoCP:

Table 6.1 Management Plans to be produced in accordance with the requirements of the DCO

Management Plan	Summary of document	Requirement
Noise and Vibration Management Plan	In accordance with the Outline Noise and Vibration Management Plan (document reference 8.1.01)	Draft DCO Requirement 18

Management Plan	Summary of document	Requirement
	submitted as part of this outline CoCP, the final plan, annexed to the final CoCP will outline mitigation measures informed by detailed design carried out post consent.	
Air Quality Management Plan	In accordance with the Outline Air Quality Management Plan (document reference 8.1.02) the final plan, annexed to the final CoCP will detail control measures relating to construction dust and the operation of non-road mobile machinery during the construction phase.	Draft DCO Requirement 18
Soil Management Plan	In accordance with the Outline Soil Management Plan (document reference 8.1.03) submitted as part of this outline CoCP, the final plan annexed to the final CoCP will provide details of mitigation measures and best practice handling techniques to safeguard soil resources.	Draft DCO Requirement
Pollution Prevention and Emergency Incident Response Plan	In accordance with the Outline Pollution Prevention and Emergency Incident Response Plan (document reference 8.1.04) submitted as part of this outline CoCP, the final plan annexed to the final CoCP will set out pollution prevention measure, emergency incident responses and spill procedures. The final plan will include a Frac Out Management Plan	Draft DCO Requirement 18
Surface Water Drainage Strategy	In accordance with the Outline Surface Water Drainage Strategy (document reference 8.1.05) submitted as part of this outline CoCP, the final plan annexed to the final CoCP will set out the principles and mitigation to be implemented in respect of the drainage strategy during construction.	Draft DCO Requirement 18
Written Scheme of Archaeological Investigation	In accordance with the Outline Written Scheme of Investigation (Onshore Archaeology) (document reference 8.09) the final plan will set out how archaeological investigations will be carried out as part of onshore preparation works.	Draft DCO Requirement 17
Landscape Management Plan	In accordance with the Outline Landscape and Ecological Management Strategy (document reference 8.10) the final plan will set out how landscaping works are to be carried out and maintained.	Draft DCO Requirements 10 and 11
Operational Artificial Light Emissions Plan	In accordance with the Outline Operational Artificial Light Emissions Management Plan (document refence 8.11), the final plan will outline the proposed operational lighting for the ONSS.	Draft DCO Requirement 26
Operational Drainage Management Plan	In accordance with the Outline Operational Drainage Management Plan (document reference 8.12), the final plan will set out the necessary measures and any	Draft DCO Requirement 15

Management Plan	Summary of document	Requirement
	maintenance identified as being required in respect of any operational drainage design.	
Construction Traffic Management and Construction Travel Plans	In accordance with the Outline Construction Traffic Management Plan (document reference 8.15) and Outline Travel Plan (document reference 8.16) the final plans will set out how construction traffic and travel will be managed throughout the onshore construction phases.	Draft DCO Requirement 21
Public Access Management Plan	In accordance with the Outline Public Access Management Plan (document reference 8.17) the final plan will set out details of public rights of way affected by onshore construction works and will include details of temporary management measures and specification for any alternative public right of way	Draft DCO Requirement 22
Highways Access Management Plan	In respect of any new or temporary accesses to highways, the access plan will set out details of the siting, design, layout, visibility splays, access management measures, lighting, signage, safety measures and a maintenance programme	Draft DCO Requirement 20
Ecological Management Plan	In accordance with the Outline Landscape and Ecological Management Strategy (document reference 8.10) the final plan will reflect survey results and the ecological mitigation measures committed to in the ES and will include a protected species mitigation management plan, a nesting birds management plan and a non-native invasive species management plan.	Draft DCO Requirement 12
Fencing Plan	This plan will set out all proposed permanent fencing, walls or other means of enclosure and any maintenance requirements.	Draft DCO Requirement 13
Contaminated Land and Groundwater Scheme	In accordance with the principles outlined in this outline CoCP, this plan will include an investigation and assessment report to identify the extent of any contamination and the remedial measures proposed.	Draft DCO Requirement 16
Flood Management and Response Plan	In accordance with the principles outlined in this outline CoCP, this plan will set out the actions to be taken in the event of flooding or a flood warning during construction works.	Draft DCO Requirement 18
Artificial Light Emissions Plan	In accordance with the principles outlined in this outline CoCP, this plan will set out how lighting will be used throughout the construction phases.	Draft DCO Requirement 18
Outline Site Waste Management Plan	In accordance with the principles outlined in this outline CoCP, this plan sets out specific mitigation measures and best practice techniques to be followed by the contractor.	Draft DCO Requirement 18

Management Plan	Summary of document	Requirement
Water Quality Management and Mitigation Plan	In accordance with the principles outlined in this outline CoCP, this plan sets out specific mitigation measures and best practice techniques to be followed by the contractor.	Draft DCO Requirement 18

Appendix 3 - Comments on Outline Soil Management Plan

Outer Dowsing Offshore Wind

Outline Documents

8.1.3 Outline Soil Management Plan

Date: February 2025

[Manager]

Pursuant to APFP Regulation: 5(2)(q)

Rev: 3.1~~0~~

Company:	**Outer Dowsing Offshore Wind**	Asset:	**Whole Asset**
Project:	**Whole Wind Farm**	Sub Project/Package:	Whole Asset
Document Title or Description:	8.1.3 Outline Soil Management Plan		
Internal Document Number:	PP1-ODOW-DEV-CS-PLA-0015_03	3rd Party Doc No (If applicable):	N/A

Rev No.	Date	Status / Reason for Issue	Author	Checked by	Reviewed by	Approved by
1.0	February 2024	DCO Application	SLR	GoBe	[redacted]	Outer Dowsing
2.0	September 2024	Procedural Deadline 19 September	SLR	Outer Dowsing	[redacted]	Outer Dowsing
3.0	December 2024	Deadline 3	SLR	Outer Dowsing	[redacted]	Outer Dowsing
3.1	January 2025	Landowner Review	SLR			

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Acronyms & Terminology

Abbreviations / Acronyms

ALC	Agricultural Land Classification
ALO	Agricultural Liaison Officer
CMS	Construction Method Statement
CoCP	Code of Construction Practice
DCO	Development Consent Order
Defra	Department for Environment Food and Rural Affairs
DESNZ	Department for Energy Security and Net Zero, formerly Department of Business, Energy and Industrial Strategy (BEIS), which was previously Department of Energy & Climate Change (DECC)
ECC	Export Cable Corridor
ES	Environmental Statement
HSSE	Health, Safety, Security and Environment
HVAC	High Voltage Alternating Current
IDB	Internal Drainage Board
LCC	Lincolnshire County Council
LPA	Local Planning Authority
MLWS	Mean Low Water Springs
NSIP	Nationally Significant Infrastructure Project
ODOW	Outer Dowsing Offshore Wind
OLEMS	Outline Landscape and Ecological Management Strategy
OnSS	Onshore Substation
PEIR	Preliminary Environmental Information Report
PPEIRP	Pollution Prevention and Emergency Incident Response Plan
SCoW	Soil Clerk of Works
SMP	Soil Management Plan
TC	Temporary Compound

Terminology

Term	Definition
400kV cables	High-voltage cables linking the OnSS to the NGSS.
400kV cables corridor	The 400kV cable corridor is the area within which the 400kV cables connecting the onshore substation to the NGSS will be situated.
The Applicant	GT R4 Ltd. The Applicant making the application for a DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation, Tota Energies and Gulf Energy Development (GULF)), trading as Outer Dowsing Offshore Wind. The Project is being developed by Corio Generation (a wholly owned Green Investment Group portfolio company), Total Energies and GULF.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP) from the Secretary of State (SoS) for Department for Energy Security and Net Zero (DESNZ).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of an impact with the sensitivity of a receptor, in accordance with defined significance criteria.
Haul Road	The track within the onshore ECC which the construction traffic would use to facilitate construction.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Joint bays	An excavation formed with a buried concrete slab at sufficient depth to enable the jointing of high voltage power cables.
Landfall	The location at the land-sea interface where the offshore export cables and fibre optic cables will come ashore.
Lower Plastic Limit	The water content at which a soil changes from the plastic state to a semisolid state.
Mitigation	Mitigation measures are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects
Onshore Export Cable Corridor (ECC)	The Onshore Export Cable Corridor (Onshore ECC) is the area within which the export cable running from the landfall to the onshore substation will be situated.
Onshore substation (OnSS)	The Project's onshore HVAC substation, containing electrical equipment, control buildings, lightning protection masts, communications masts, access, fencing and other associated equipment, structures or buildings; to enable connection to the National Grid
Outer Dowsing Offshore Wind (ODOW)	The Project.

Term	Definition
Order Limits	The area subject to the application for development consent, the limits shown on the works plans within which the Project may be carried out.
Preliminary Environmental Information Report (PEIR)	The PEIR was written in the style of a draft Environmental Statement (ES) and provided information to support and inform the statutory consultation process during the pre-application phase.
The Project	Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.

Reference Documentation

6.1.3	Project Description
6.1.23	Geology and Ground Conditions
6.1.25	Land Use
8.1	Outline Code of Construction Practice
8.1.4	Outline Pollution Prevention and Emergency Incident Response Plan
8.1.5	Outline Surface Water and Drainage Strategy
8.1.7	Organic Land Protocol
8.10	Outline Landscape and Ecological Management Strategy

1 Introduction

1.1 Purpose of this Outline Soil Management Plan

1. This Outline Soil Management Plan (Outline SMP) is provided as part of the Outline Code of Construction Practice (CoCP) (document reference 8.1).
2. The Outline SMP, by reference to the assessments reported in the Environmental Statement, sets out the key elements that will be included in the detailed SMP which the Applicant will be required to submit to the relevant Local Planning Authority (LPA) in consultation with Lincolnshire County Council (LCC) for approval prior to commencement of construction.
3. This Outline SMP sets out the principles and procedures for general good practice mitigation for soil management during the onshore construction works to minimise the adverse effects on the nature and quality of the soil resource. It should be read in conjunction with the Outline CoCP and the assessment of the Project's impacts on ground conditions (Volume 1, Chapter 23: Geology and Ground Conditions (document reference 6.1.23)).

1.2 Scope of this Outline SMP

4. The controls and management measures presented in this Outline SMP apply to all soils within the Order Limits, unless otherwise stated. This includes the Landfall, the Onshore Export Cable Corridor (ECC), 400kV cable corridor and the Onshore substation (OnSS).
5. For the avoidance of doubt, this Outline SMP relates to the onshore elements of the Project only (i.e., landward of Mean Low Water Springs (MLWS)). This document does not relate to offshore works.
6. This Outline SMP is based upon guidance contained in the Department for Environment, Food and Rural Affairs' (Defra's) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (2009); the Institute of Quarrying, Good Practice Guide for Handling Soils (2021); and professional experience.

1.3 Other Control and Management Plans

7. Additional management plans that are relevant to soils are listed below which are submitted as part of the Development Consent Order (DCO) application.
   - Outline Pollution Prevention and Emergency Incident Response Plan (PPEIRP) (document reference 8.1.4);
   - Outline Surface Water and Drainage Strategy (document reference 8.1.5);
   - Outline Landscape and Ecological Management Strategy (OLEMS) (document reference 8.10).
   - Outline Organic Land Protocol (OLP) (document reference 8.1.7)

1.4 Review and Update of the Outline SMP

8. Prior to construction, site and soil-specific measures will be set out in a the final SMP, based upon this Outline SMP, and will be supplemented by survey data where required.

9. Prior to submission to the LPA, the final SMP will be submitted to the Landowner Interest Group (LIG) providing no less than 10 working days for comments to be provided. Comments will be taken on board by the Project and alterations will be made where appropriate prior to work commencing.
10. The CoCP and SMP will be submitted to the relevant Local Planning Authority (LPA) in consultation with LCC for approval prior to commencement of construction.
11. To secure effective delivery of the SMP, the contractor must implement the plan through the location-specific construction method statements. 'Locations' will be determined by the contractor and/or the Soils Specialist depending upon factors such as, but not limited to, the works to be undertaken, the machinery to be used, soil types and results of any additional survey works, and site constraints (for example, depth to water table, or ecological constraints).
12. The works must also be monitored to audit compliance with the SMP (and location-specific construction method statements) and to allow ongoing advice on soil handling to be provided.

2 Roles and Responsibilities

2.1 Overview

13. The effective implementation of the SMP requires that roles and responsibilities are clearly defined and understood. Specific job titles, roles and responsibilities will be defined by the Contractor. The contractor will appoint an Agricultural Liaison Officer (ALO), or similar, and a Soil Clerk of Works (SCoW) whose roles and responsibilities are expected to be similar to those described below, to manage soils.

2.2 Agricultural Liaison Officer

14. The ALO will ensure that the specifications of the Organic Land Protocol (OLP) (document reference: 8.1.7) and site-specific construction method statements/soil management plans are implemented. It is envisaged that the ALO will work in cooperation with the SCoW with soil science capability.

    It is likely that the ALO role will not be performed by one person individually, with multiple ALOs appointed that are familiar with local agricultural and soil conditions.

    The main duties of the ALO will comprise, but will not be limited to:

    - liaison between the Contractor, Landowners and the Applicant;
    - assessing compliance of the work on site with the SMP; and
    - ensuring the adequacy of the detailed aftercare programme and its annual updates (if required);

2.3 Soil Clerk of Works

15. It is likely that the SCoW role will not be performed by one person individually, with multiple SCoWs appointed that are competent in soil science, management of soils during removal, construction and restoration, and familiar with local agricultural and soil conditions.

    The main duties of the SCoW will comprise, but will not be limited to:

    - assessment of the soil condition before, during and after the works using tactile and visual methods;
    - providing advice with respect to construction activities and their interface with respective technical areas of expertise;
    - undertaking any necessary pre-construction soil surveys and supervising the implementation of specific mitigation measures, where required;
    - undertaking any required monitoring related to their specialism;
    - providing reports and maintaining contact with relevant stakeholders, as required;

- signing off the quality of reinstatement (of soils) to allow for the commencement of the aftercare;
- soil sampling and production of annual aftercare reports;
- signing off the completion of aftercare; and
- providing specific advice with respect to any issues that may arise.

2.4 Pre and Post Construction Surveys

16. Prior to and post construction, a competent person will be employed to ensure that information on existing agricultural management and soil/land conditions is obtained, recorded and verified by way of a detailed pre and post construction condition survey.
17. Agricultural Land Classification (ALC) surveys (MAFF 1988) ~~and British Standard soil testing~~ will be undertaken across the areas in which construction activities are proposed. Following MAFF 1988 guidance, ~~S~~survey points will be ~~made~~ at least every 100m or in each field where the field is less than 100m in length, to a depth of 1.5~~2~~m. Where changes in soil type and / or depth are identified, an additional point will be surveyed at 50m, in order to provide more accuracy on where the change occurs. Detailed descriptions of soils will be recorded following the Soil Field Handbook (Hodgson, J 1997). Resulting detailed soil descriptions will be used to define upper topsoil, lower topsoil, upper subsoil, and lower subsoil (where present) horizons. Samples of upper topsoil, lower topsoil, upper subsoil, and lower subsoil will be taken within each soil type for Particle Size Distribution (PSD) analysis, in order to calibrate and confirm hand texturing.
18. Using methodology defined within the ALC Guidance, the stoniness of soils will be assessed to inform the ALC grading and ensure that soils are restored to their stone free or equivalent state.
    - Stone content will be recorded as a specific percentage rather than the percentage range as detailed within the ALC Guidance.
    - Post condition soil surveys will use the same metric, so that a direct comparison can be made when comparing to a baseline survey and the land returned to its post works condition.
19. As part of the condition survey, and in addition to addressing matters relating to soils and other factors including existing crop regimes, the position and condition of field boundaries, existing drainage of the soil, existing access arrangements and private water supplies (as far as reasonable investigations allow), the type of agriculture taking place, the yield of crops and the quality of grazing land will also be recorded. Liaison with affected landowners and tenants will be undertaken to identify potential constraints and barriers to construction and identify the provision of any temporary drainage requirements and/or drainage diversions.
20. ~~Such aspects~~Results and determinations from the ALC Survey will be recorded and entered into a pre-entry record of condition for the affected Landowner. The commencement of construction will reflect agreements made with affected parties to minimise disruption, where possible, to existing farming regimes and timings of activities (e.g., cropping).

Commented [IG1]: Is there a reason for removal of BS standard? It would provide additional testing requirements than ALC which will inform horizon differences

Commented [PW2]: Given cable depth is 30cm below existing drainage, which can be at least 1.2m or more below the ground surface, 1.2m surveying depth will not pick up presence of deep running sand/silt layers which could be impacting the cable and its installation

Commented [PW3R2]: The oCoCP states at 5.15 (108) that cables should be buried 0.3m below operational field drainage depth. ODOW state field drain depths are usually between 0.9m and 1m (RR067.020). Consequently, the survey depth, if specified at 1.2m falls short of the cable burial depth of (0.3m + 1.0m) 1.3m. THC in their WR 750367395.2 (4.3.1 (ii)) describe fields having drains at 1.2m depth. This increases cable burial depth by a further 0.2m, requiring a survey depth of 1.5m.

Commented [PW4]: These represent differing horizons, as opposed to specifically topsoil and upper/lower subsoil layers. Foxholes field had upper and lower topsoil horizons (as determined by the laboratory testing) with a subsoil horizon beneath. Other fields could differ, some as currently described, and others with potentially more, or fewer horizons which differ to each other. I suggest this terminology needs to be more general as a result.

Commented [PW5R4]: THC's response to ExQ1 LU 1.12 highlighted the presence of multiple **topsoil** horizons (in fields on the cable route). Both upper and lower horizons in the topsoil (where present) need to be identified. These horizons then must be segregated throughout the construction process, including stripping, storage, and reinstatement. This ensures the reinstated profile, where it includes multiple horizons in either the topsoil or subsoil, replicates the profile beforehand, and also replicates the profile in areas adjacent to the construction corridor. In turn, this provides a consistent soil profile, across the entire field. This is then capable of delivering consistent crop marketable yield. If multiple layers of differing soil quality were present in the topsoil, for example, and not segregated, then after reinstatement the resulting mix of 2 layers would have different characteristics (due to mixing) and therefore give a different environment for crops to grow in. The consequence would be differential crop growth and ripening compared to adjacent, untouched areas in the field.

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21. The SCoW will undertake routine site inspections during construction to monitor working practices and ensure landowners' and farmers' reasonable requirements are fulfilled. The SCoW will also retain a function with regards to agreeing reinstatement measures following completion of the works.
22. A full record of condition on a plot-by-plot basis will be undertaken including photo log, this will be produced to the landowner and signature gained as a true reflection of the land parcel both Pre and Post construction.
23. For Grade 1 land, in addition to Pre and Post Construction Soil Surveys described above, at the landowner's request, additional surveys will be conducted pre-construction, pre-restoration, and post-construction to assess soil health, condition and nutrient levels.

    If requested, Soil Assessment will be undertaken by a combination of visual assessment and laboratory analysis to UKAS accredited standards, following AHDB Soil Health Scorecard Approach and Sampling Protocol for England and ~~Wales (~~Wales (AHDB, 2022), as shown within Table 1 below.

Table 1: Soil health scorecard indicators – Assessment ~~methods (~~methods (AHDB, 2022)

	Soil health scorecard indicators		
Comparison categories	Physical	Chemical	Biological
Region (rainfall class)	Visual assessment of soil structure (VESS) most limiting layer	pH	Earthworm count
Rotational cropping		Phosphorus (P)	Soil Organic Matter (SOM
Upper and lower Topsoil characteristics		Potassium (K)	
		Magnesium (Mg)	Microbial activity
Assessment method:	Field assessment	Laboratory analysis	

Commented [PW6]: Note assessment of upper and lower topsoil horizons, if present, would apply

Commented [PW7R6]: See comments in 17. It is vital to compare both horizons individually, so the profile post reinstatement is representative of the field areas adjacent.

3 Coastal Soils of Lincolnshire

3.1 Overview

24. The coastal soils of Lincolnshire are developed in a large part in salt marshes and tidal flats reclaimed by sea walls, and form some of the best agricultural land in the UK. These are used extensively for large-scale vegetable growing in some areas. The soils are often in very complex patterns, reflecting the depositional environment of the saltmarshes, with their many tidal creeks; it is usual to have a number of soil types in a single field. Soil horizons may vary between and within fields, detailed descriptions will be provided of upper -topsoil, lower topsoil, upper subsoil, and lower subsoil (where present) following pre-construction ALC Surveys.

Commented [PW8]:

Commented [PW9]: See comments in section 2.4 (17).

25. This land is subject to naturally shallow groundwater, the control of which is essential to the use of the land for intensive agriculture and horticulture. Groundwater levels are controlled by ditches and a pumped system, in an efficient arterial drainage system operated by the Internal Drainage Boards (Witham Fourth District IDB, Black Sluice IDB, South Holland IDB, Welland and Deepings IDB & and Lindsey Marsh IDB) to which landowners/Occupiers pay a drainage levy which allows them to discharge water from their land directly into either riparian ditches or the main internal drainage board water courses. Locally the majority of land under the internal drainage boards caption areas is of agricultural use.
26. The land within the Order Limits is entirely mapped as Grades 1 – 3. Due to the current scale of the published ALC mapping, it is not possible to differentiate between the sub-grades Grade 3a and Grade 3b, with only the overall Grade 3 present in the Natural England Provisional ALC maps. This is of relevance as Natural England describe best and most versatile land as Grades 1 – 3a, with Grade 3b not being considered best and most versatile land.
27. A high proportion of the land where the onshore ECC crosses, is of Grades 1 and 2 agricultural land quality (MAFF 1988), comprising marine ‘silts’. The lighter soils are easily worked with machinery year-round, aided by agricultural land drainage with little serious groundwater influence (with maintenance of drainage measures) stone-free and have very large reserves of moisture available to sustain crop growth; these form the Grade 1 quality land. Some soils are slightly heavier, which reduces the workability and moisture holding capacity slightly and these give Grade 2 land.
28. Other land, mainly in the northern parts of the Order Limits, have heavy soils developed mainly in alluvial clays which limit the agricultural land grade to Subgrade 3a and 3b, mainly because of varying wetness due to clay loamy soils.
29. There are three published sources of soil information available for the Order Limits: the areas around Friskney and Wainfleet are covered by a detailed soil map published at 1:25,000 scale (Robson 1985); the areas around Weston Marsh are covered by a semi-detailed map published at 1:50,000 scale (Robson 1990). The whole area is covered by the National Soil Map (Hodge 1984) at 1:250,000 scale.

3.2 Running Soils

30. ‘Fen Silt’ or ‘Marine Silt’ are colloquial terms referring to the banded coarse material at the base of many soils in the fens and marshes of the flatlands derived from marine alluvium. Silt size particles are defined as 20-60 µm in diameter whereas the majority of the “marine silts” are actually dominated by fine sand (60-200 µm) fraction, often with a high percentage of very fine sand (60-100 µm). The clay content of the material is typically low (<5%), and the material tends to be weak and can cause difficulties in construction.
31. Digging in the material becomes difficult because the fine sandy material can ‘run’ into the excavation, so that the excavation becomes wider but no deeper. This is the phenomenon of ‘running sand’ and can often be caused if the excavation is below the water table (partly caused by pressure from moisture in the surrounds) but may also occur in loose dry non-cohesive material conditions, as in beach sands. The Construction of trenches in these materials will require detailed engineering design and processing to ensure that suitable construction methods and mitigation are in place.

3.3 Location of potentially unstable areas

32. The principal soil type where potentially unstable soils may occur is the Wisbech series: naturally groundwater-affected silt loams and fine sandy silt loams formed in marine alluvium. The soils of the fenland occur in very complex patterns so that Soil Associations[1] are used in all publications. Wisbech is typically ‘associated’ with fine silt and clay soils. The relevant Association as described on the National Soil Map4 is 812b: Wisbech Association. These are most commonly recorded in the southern part of the Order Limits south of Burgh-le-marsh and are extensive around Weston Marsh. They are associated with Grade 1 Agricultural Land Quality. The recorded extent of these soils[2] within the Order Limits is between Freiston and Weston Marsh.
33. Other soils in the south are fine silty types, like Tanvats Association (811e), which mainly give rise to grade 2 quality land. They are less likely to encounter the problem of ‘running sands,’ although there may be ‘running sand’ at depth (below the upper 1.2 m typically regarded as the soil layer) which would be encountered during cabling excavations.
34. Most of the land in the northern section of the Order Limits is recorded as alluvial clay soils of the Wallasea and Newchurch Series. There are areas of Wisbech soils associated with these main soil types, usually in very narrow strips on raised banks, and are less likely to give rise to the ‘running sand’ problems.

[1] Groups of soils formed in the same geology/landscape position which cannot be mapped separately at the given mapping scale.
[2] The published soil maps give an indication of likelihood only and are not sufficiently accurate for identification on a field-by-field basis.

3.4 Drainage

35. Soils in the area are artificially drained to control surface water and aid ground water levels, and groundwater is easily controlled in them by ditches and pumps in an efficient arterial drainage system operated by the IDB. Thus, the depth of the groundwater tables in the soils will depend on the pumping intensity and the time of year. The IDBs keep drain levels around 1m lower in the winter to allow capacity for drainage.

4 Onshore Construction Elements

4.1 Onshore ECC and 400 kV cable corridor

36. The working width of the Onshore ECC will typically be 80m wide and up to 70km in length. The 400kV Cable Corridor has a typical working width of 60m. This will allow for up to four cable trenches, temporary soil stockpiles, drainage, haul road and working areas around the cable trenches. The expected width of each cable trench at surface will be up to 5m.
37. Following cable trench excavation, a thin layer of thermal bedding sands such as cement bound sand will be packed around the ducts in order to aid heat dissipation. Subsoil and topsoil previously removed will then be backfilled and suitably compacted in sequence to the appropriate horizon depths to ensure land gradients remain as Pre project on a plot-by-plot basis this will be compared via pre and post surveys.

4.2 Onshore Substation (OnSS)

38. Construction of the OnSS will initially affect approximately 209,000m^2 of land comprising a substation footprint of up to approximately 144,000m^2 (in the event that an AIS substation is taken forward).

4.3 Temporary Construction Compounds

39. Temporary construction compounds of various sizes will be required at the Landfall, along the onshore ECC and 400 kV Cable Corridor, and at the OnSS location. Their use is described in ES Chapter 3 Project Description (document reference 6.1.3). Table 1 outlines the MDS parameters for the anticipated compounds.

Table 12: Maximum design parameters for Landfall, onshore ECC & 400kV cable corridor temporary construction compounds

Parameters	Design Envelope
Landfall Primary Construction Compound [PCC-1]	
Maximum Total number	1
Maximum duration per compound (months)	51
A52 (Hogsthorpe) Primary Construction Compound (A52 Hogsthorpe PCC) [PCC-3]	
Maximum Total number	1
Maximum duration per compound (months)	51
Onshore ECC & 400kV Cable Corridor Primary Construction Compounds (PCCs)	
Maximum Total number	7
Maximum duration per compound (months)	36
Onshore ECC & 400kV Cable Corridor Secondary Construction Compounds (SCCs)	
Maximum Total number	20
Maximum duration per compound (months)	24
Onshore ECC & 400kV Cable Corridor Cable Installation Compound (CICs)	
Maximum Total number	324
Maximum duration per compound (months)	6

Parameters	Design Envelope
OnSS Primary Construction Compound (OnSS PCC) [PCC-29]	
Maximum Total number	1
Maximum duration per compound (months)	36[3]
OnSS Security & Logistics Compound [PCC-30]	
Maximum Total number	1
Maximum duration per compound (months)	36

40. Temporary construction compounds will be removed, and sites restored including agricultural land drainage to their original condition when the compound is no longer required.

4.4 Haul Road

41. A temporary haul road will be constructed within sections of the onshore ECC and 400kV cable corridor. It is assumed that there will be a requirement to import aggregates to create a stable surface for construction traffic movements. Other options such as bog-matting, trackway or geotextiles will also be considered, and employed where required. Vehicle passing points will be created to facilitate safe two-way traffic flow on the haul route.

42. Following the methodology defined within Section 2.4, pre and post-construction soil surveys will be carried out to ensure that soils are returned to their original stone free state.

~~41.~~

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[3] A portion of the OnSS PCC will be retained for an additional 15 months for commissioning works.

5 Soil Management

5.1 General Soil Handling Principles

42.43. Best practice measures will be implemented to avoid degradation and deformation during all phases of soil handling. The main threats to soil resources on construction sites are trafficking of vehicles and incorrect handling (Defra, 2009a). Trafficking and incorrect handling can damage the structure of the soils through over-compaction and contamination. These effects compromise the ability of the soil to perform its functions such as providing adequate air, nutrients and water to plant roots. To minimise the risk of degradation to soils, the following guidance will be adhered to during all soil handling tasks:

- No trafficking of vehicles/plant or storage of materials to take place outside designated working areas. Heavy plant and vehicles to be restricted to specific routes;
- The soils (topsoil and subsoils) will not unnecessarily be trafficked or trampled by vehicles, which will operate on the 'basal'/non-soil layer where possible;
- No trafficking of vehicles or plant on reinstated soils (topsoil or subsoil);
- Plant and machinery to only work when ground or soil surface conditions enable their maximum operating efficiency (i.e., when machinery is not at risk of being bogged down due to wetness);
- Plant and machinery will be maintained in good working order; low ground pressure and tracked vehicles will be used where possible when working directly on bare or vegetated soils (this reduces the intensity of ground compaction);
- Stripping areas are to be protected from in flow of water and ponding. Wet areas will be drained in advance of stripping;
- Where practicable, soils will only be moved when they are in a dry and friable condition, based on field assessment of the soils' wetness in relation to its lower plastic limit;
- Transportation of soils to be kept to the absolute minimum to reduce the risk of contamination between fields; and
- No mixing of soil profiles, maintaining separation between upper topsoil, lower topsoil, upper subsoil and lower subsoil (where present), or of soil with other materials.

43.44. The size of the earthmoving plant to be used will be tailored to the size of the area to be stripped, the space available within the working area, the volumes and haul distance. Long reach excavators, which will minimise the need for movement across the soil surface, and tracked vehicles, will be used where needed to reduce soil compaction.

44.45. The selection of appropriate equipment and work practices is important as mishandling of soil can have an adverse effect on its fertility, permeability, ecological diversity, and the performance and visual quality of vegetated areas. Mishandling can also increase the risk of flooding and off-site discharges.

45.46. Multiple handling of soil materials will be minimised.

46.47. The detailed SMP and location-specific construction method statements will be defined based on the results of the site investigation and soil survey reports, where available. The reports will specify the detail of the existing soil characteristics and the depths and properties of the topsoil and subsoil horizons. Each location-specific construction method statement shall include details of the methods of working, proposed site machinery and tillage equipment, materials and Health, Safety, Security and Environment (HSSE) requirements.

47.48. A pre-start meeting will be held with the relevant stakeholders to finalise and changes to the plans and sign off the location-specific construction method statements.

5.2 Management of 'Running Sand'

48.49. The following process is suggested for management of soils potentially subject to 'running sand' problems (See Section 03.2).

- Identify the likely areas where the 'running sand' problem is most likely to occur using ground investigation such as test boreholes, along with published soil maps and informed local opinion;
- A detailed soil survey of the route pre-construction ~~at a minimum density of one investigation per 100m to identify~~following methodology detailed in Section 2.4, to identify the presence of silt soils and groundwater-affected soils;
- Use land-type specific engineering measures in these areas to ensure there is no risk of trench collapse, erosion or water pollution (as outlined below).

49.50. Engineering measures to be considered during construction:

- Avoid breaking into watercourses and ditches to keep any material from entering.
- Separate ~~'soil' (~~the upper 1.2m of soil (by upper topsoil, lower topsoil, upper subsoil, and lower subsoil horizons where these exist~~)~~ from any underlying material and ensure that underlying material is replaced below the soil when trenches are filled. ~~This would be most simply achieved by separating the upper 0.5m to 1.0m of subsoil from any material below.~~

5.3 Adverse Weather

50.51. During certain weather conditions soil handling and movements must be effectively managed to reduce the risk of degradation and damage. Soil handling during adverse weather will adhere to the following criteria:

- During wet periods, mechanised soil handling in areas where soils are highly vulnerable to compaction will be limited as far as practicable;
- If there is heavy and/or consistent rainfall (e.g., heavy showers or slow-moving depressions), the suspension of soil operations must be considered;
- If sustained heavy rainfall (e.g., >10mm in 24 hours) occurs, soil handling operations must be suspended. Soil operations must not restart until the ground has had at least one full dry day ~~or~~and an agreed moisture criteria of the soil can be met (such as 'drier than the plastic limit') as advised by the SCoW;

- The working area should be protected against water ponding and inflow of water; and
- Additionally, soil should not be handled or trafficked when the ground is frozen or covered by snow.

~~51.~~52. When a rainfall event forces the suspension of soil handling operations, the soil profile within the active strip should be stripped to the basal layer (i.e., measured topsoil depth) before cessation of works. New active strip areas should not be started.

~~52.~~53. Before soil handling operations recommence, the weather forecast should be checked and works only recommenced if no further heavy rain is forecast during a period which would require stoppage part way through the stripping of an area. Soil moisture must be tested prior to recommencing to determine the appropriate methodology for handling.

5.4 Determining Soil Moisture

~~53.~~54. Soils should only be handled when dry and friable to avoid degradation and compaction. This may not be practicable for all soil handling operations due to the scale of the Project.

~~54.~~55. Soil moisture and condition should be tested prior to work recommencing. Methods for determining soil condition are set out as follows:

- Step A - Attempt to roll a soil sample into a ball by hand; and
- Step B - Attempt to roll ball into a 3mm diameter thread by hand.

~~55.~~56. If it is not possible to roll the soil into a 3mm diameter thread the soil will be determined to be below the plastic limit.

~~56.~~57. The appropriate methodology for handling and storage of the soils will be determined and approved via the final SMP based on the plasticity and the moisture content of the soils.

5.5 Site Preparation

~~57.~~58. Site preparation will include the demarcation fencing and signage of the designated access, working and storage areas as well as the removal of vegetation from within the work areas.

~~58.~~59. The working areas to be stripped of soils should be bare or only short surface vegetation should remain (<100mm). This can be achieved by mowing or strimming grassland/arable areas with the cuttings disposed of off-site at a suitably licenced green waste facility. Vegetation cuttings must not be added to or mixed with the soils as the presence of organic plant matter within the soils may cause anaerobic conditions as the plant matter degrades (rotting).

~~59.~~60. Alternatively, the vegetation may be killed off by application of a suitable, Environment Agency approved, non-residual herbicide applied not less than two weeks prior to commencement of soil stripping operations at the location. Herbicide may only be used with the consent of the landowner and the Project would ensure that ALOs maintain communication with farmers/landowners to ensure their needs are understood before, during and after construction.

~~60.~~61. Hedgerows/trees will be felled, the tree stumps and associated large roots (>20mm diameter) will be removed using a suitable agreed method. All woody materials associated with

the removal of the trees and hedgerows will be disposed of off-site at a suitably licenced facility. To reduce potential anaerobic conditions in the soils during stripping and storage, no woody materials including chippings will be incorporated into the soils during stripping.

5.6 Drainage

~~61.~~62. All existing land drainage records collated will form part of a full pre and post construction land drainage design along with topographical surveys and any historic landowner information to mitigate any issues of water ingress during construction and to keep the integrity of the existing system on the remaining parts of the field, allowing the Landowner/Occupiers to farm the remaining parts of the field through the construction period.

~~62.~~63. Each individual land parcel will be designed taking into consideration the existing use of the land and the Landowner's requirements.

~~63.~~64. Existing land drains, encountered during construction, will be appropriately marked. Temporary drainage will be installed within the working width to intercept existing field drains and ditches in order to maintain the integrity of the existing field-drainage system. Such measures will also assist in reducing the potential for attenuation of ground water form during the works, with a consequential impact on soil structure and fertility. Where necessary, existing land drains will be replaced to ensure continued agricultural use.

~~64.~~65. Particular care will be taken to ensure that the existing land drainage regime is not compromised as a result of construction. Land drainage systems will be maintained during construction and reinstated on completion. Where existing land drainage systems are replaced, any severed existing drains upstream of the severance must be removed to avoid water being channelled by such redundant drains (were they not to be removed) to the severance area after reinstatement. All drainage present after reinstatement must be capable of being jetted from a ditch outfall to its full length.

~~65.~~66. Pre-construction cut off drains will be installed to divert the existing land drainage away from the working easement this will allow the existing system to affectively perform on the high side of the easement as it has done pre-construction, the installation of a cut off drain will also mitigate water entering the excavations of the cable trenches.

~~66.~~67. Post construction drainage will be required on the working easement and any temporary areas used during construction as construction will sever any existing land drainage, several post construction design techniques will be considered dependant on individual landowner requirements. All such techniques will allow unrestricted jetting of all drainage pipes to their full length from a ditch outfall.

~~67.~~68. All designs will be discussed with the Landowners and will be in line with MAFF /ADAS (1982) before installation, as detailed within Section 5.15 of the Outline Code of Construction Practice.~~.~~

Commented [PW10]: Note in the event of a dispute, the oCoCoP needs amending to the effect: *"Should there be a dispute between the parties then the matter will be referred to expert determination where an independent drainage expert, with appropriate experience of the soils concerned, will be appointed by ADAS".*

~~68.~~69. Once the post construction land drainage has been installed subsoiling (ripping) will be undertaken to an indicative depth of 350mm from subsoil (or upper subsoil where this exists) level, this will alleviate compaction caused by construction and aid soil structure recovery, subsoiling will only be undertaken in dry conditions. Once the topsoil has been reinstated the topsoil (including upper and lower topsoil where these exist) will also be ripped to mitigate any compaction from the reinstatement process.

5.7 Soil Stripping

~~69.~~70. Any soil stripping will follow guidance set out in Defra's Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2009a). The depth of the topsoil strip is to be determined on a location-by-location basis using the pre-construction soil survey data as described in Section 2.4 and communicated via the SMP.

~~70.~~71. Once the working width has been cleared of vegetation, existing measured topsoil will be stripped (with the exception of an area to be used for topsoil storage). Stripping will be carried out when the soil is reasonably dry and friable.

~~71.~~72. Appropriate machinery and methods will be used to minimise soil compaction where the soil conditions indicate that compaction is possible. Topsoil stripping will generally be undertaken by an excavator positioned on the surface of the topsoil, excavating to the maximum topsoil depth without disturbing or removing the subsoil. Alternatively, a dozer can be used to strip the topsoil by pushing the topsoil into a bund or to an excavator.

73. Following the topsoil strip, subsoil will be excavated to the required depth from the trenches.

~~72.~~74. Where distinct, upper and lower topsoil, and/or upper and lower subsoil layers exist, these are to be kept apart for storage and reinstatement.

5.8 Soil Storage

~~73.~~75. The stripped upper and lower topsoil horizons, and excavated upper and lower subsoil horizons (where these exist) will be stored separately within the working width. The ground where the soil stores will be located will be free from vegetation and waste, and positioned away from tree crowns, root protection zones, watercourses and ditches. To ensure soil stores are located away from run-off, cut off ditches and swales will be used to divert water to a suitable drainage system. All designated soil storage areas would be a minimum of 10m from any open watercourse features, where practicable.

~~74.~~76. Any soil stores along the onshore ECC would be kept to minimum possible size with gaps to allow surface water runoff to pass through.

~~75.~~77. To avoid blocking overland flow of surface water during heavy rainstorms large soil stores will be appropriately sited, and there will be a provision of gaps between soil stores to allow passage of surface water. This will be detailed further in the surface water drainage strategy for each phase of work along the ECC.

~~76.~~78. Stockpiling and other works in areas that are shown to have higher flood hazard class ratings (as identified within Section 24.5 of the Onshore ECC and 400kV FRA (document 6.3.24.2, version 3) will be minimised or avoided where possible, in order to mitigate against any increased risk and allow flood flow through and within flood cells.

~~77.~~79. All stockpiling will be located on the landward side of any flood defences.

~~78.~~80. Topsoil and subsoil of different types and from different fields will be stored according to the soil profile, separating upper topsoils, lower topsoils, upper subsoils, and lower subsoils (where present), as will soil from hedgerow banks or woodland strips, to reduce the potential for crop contamination during reinstatement. Sufficient space will be left between stores of different soil types to ensure segregation.

~~79.~~81. Topsoil can be stored on either topsoil (of the same type) or on subsoil. Subsoil can only be stored on subsoil, therefore, the topsoil will be stripped from any subsoil storage areas prior to subsoil stripping or placement.

~~80.~~82. Stripped topsoil will be stored to the side/s of the working width in a manner that provides sufficient separation from subsoil and vehicles. Soil will be stored in an area of the site where it can be left undisturbed and will not interfere with site operations. Ground to be used for storing the topsoil will be cleared of vegetation. Topsoil will first be stripped from any land to be used for storing subsoil.

~~81.~~83. Upper t~~T~~opsoil and lower topsoil (where present) will be stored in bunds will typically be 2 m in height and no more than 3 m in height. Upper subsoil and lower subsoil (where present) will be stored in bunds no more than 3 m to 5 m in height (dependent on whether there is space to have a bund either side of the ECC during construction, or whether a single taller bund will be used for storage in narrower working areas) in order to minimise compaction and the impact of storage on biological processes.

~~82.~~84. Stockpiles will be labelled with appropriate signage, a unique identifier and recorded on a plan to avoid confusion and risk of contamination.

5.9 Stockpile Maintenance

~~83.~~85. Effective programming will ensure soil is stored for the minimum time possible. Where soil is to be stored for over 6 months it will be covered or sown over the top and sides with an agreed seed mix to protect the soil against erosion, minimise soil nutrient loss, and maintain soil biological activity.

~~84.~~86. Appropriate seeding will also help prevent colonisation of the stockpile by weeds, including noxious / injurious weeds, which could spread seed onto adjacent land.

~~85.~~87. Where agreed with the landowner, the seed mix may be a legume-rich mix to fix nitrogen into the soil to help support growth of other grasses.

~~86.~~88. In the period when grass cover is establishing on the stockpiles, and where required during dry weather, the stockpiles will be watered to prevent wind erosion (generation of dust) and to ensure that the seeds establish.

~~87.~~89. The stockpile vegetation cover is to be managed (by spraying, mowing or stripping as appropriate and as defined in location-specific construction method statement, or similar), to prevent the spread of seeds from the stockpile onto adjacent land.

~~88.~~90. The condition of the stockpiles will be regularly monitored. If rainwater gathers on the stockpile surface or in areas directly adjacent to them, drainage pathways to soakaway areas away from the stockpile should be provided.

5.10 Reinstatement

~~89.~~91. The main objectives for the reinstatement of the land will be to restore it to its pre-development quality as far as is reasonably practicable, as determined by the information obtained during the pre-construction soils survey and agreed with the landowner. This will primarily be achieved by ensuring that the full soil profile is reinstated in the correct sequence of horizons, and in a state where good soil profile drainage and plant root development are achieved; and by ensuring that the reinstatement works cause minimum damage to soil structure.

~~90.~~92. Therefore, soil reinstatement methods will be designed to achieve soil profiles as close to the original (pre-construction) as possible and land will be reinstated as soon as reasonably practical after completion of the construction works.

~~91.~~93. The concept of 'partial restoration' during the construction of the Onshore ECC may be considered where practicable. 'Partial restoration' will involve reinstatement of the land above the cables upon completion of the trenching works, where possible, this land would be returned to agricultural use. The haul road and land required for soil storage or access would be retained for use until the completion of the construction works.

~~92.~~94. Soil reinstatement will be subject to the same constraints of weather (stop conditions) as soil stripping (see Section 5.6).

~~93.~~95. It is likely that the subsoil will have been heavily compacted during the construction period. Subsoil decompaction and preparation will be necessary prior to topsoil reinstatement to improve permeability, this will be carried out using the most appropriate agricultural equipment for the site, such as subsoilers with deep-ripping shanks designed to penetrate and break compacted soil. Where requested by the landowner, subsoiling will be carried out by an appointed contractor prior to the reinstatement of topsoil.

~~94.~~96. Soil reinstatement is the reverse of soil stripping with topsoil being replaced over subsoil. The specifications for reinstated soil profiles are to be determined on a location-by-location basis using the soil survey data and set out in location-specific construction method statements. Care must be taken to ensure that soil horizons are replaced to their original position, and to the correct thickness (with an allowance of up to 20% bulking to allow for settlement).

~~95.~~97. Generally, any surplus subsoil material from trench excavation will be spread across the working width prior to topsoil reinstatement on a field-by-field basis provided this will not impede achievement of restoration objectives and provided the materials are compatible, in consultation with the relevant landowner.

96.98. Given the volume of soil being stripped within the OnSS footprint, there may be a requirement to remove soil off-site. Where possible, stripped topsoil will be re-used in landscaping and excavated material will be used in landscaping screening bunds (if required).

97.99. Offsite disposal of surplus soil material shall only be considered where use on-site is not feasible. The landowner/occupier will be consulted before any off-site disposal is planned. In such instances disposal will be undertaken in accordance with the Waste (England and Wales) Regulations 2011 and the Site Waste Management Plan which will be submitted for approval as part of the CoCP post consent.

98.100. Where land is returned to agricultural use, the quality of the soil reinstatement will need to be verified by the SCoW as described below.

99.101. Aftercare will commence after soil characteristics required to achieve the reinstatement standard have been achieved. For the land in agricultural use before construction this means that the soil is brought as close as reasonably practicable to the physical state it was before construction.

100.102. Soil surveys ~~and soil testing~~ will be carried out following the methodology detailed in Section 2.4, to record the physical characteristics of the reinstated soils. This will allow the post-construction/reinstatement condition of the soils and land to be judged against/compared with their pre-construction condition, as determined through the detailed pre-construction soil surveys. The SCoW will then compare the characteristics of the reinstated soils to the 'before' statement to verify that the land has been reinstated to the required standard. If the reinstated soil properties are found to differ from the 'before' characteristics to an extent that makes it impossible for the standard to be reached, remediation will need to be carried out. This approach will ensure that any problems are identified and rectified early after construction and before the aftercare period commences.

101.103. Soil surveys carried out by the SCoW will include an assessment of stoniness, to ensure that soils have been returned to their stone free or equivalent state. Where stone content is found to be above the percentage identified in the pre-construction ALC Survey, appropriate remedial action through mechanical means or by hand will be discussed with the landowner.

5.11 Aftercare

102.104. Depending on the land-use, agricultural activities, site-specific conditions, and site-specific construction activities, the aftercare may include treatments such as: cultivation (e.g. subsoiling), installation of land drainage schemes, seeding, liming, and/or fertilising, as and when required.

103.105. The aftercare programme is to be agreed between the Contractor, landowner, and (if applicable) tenant farmer. It will clearly define who is responsible for which part of the programme.

~~104.~~106. A flexible period of aftercare of minimum one-year duration is suggested (Defra, 2009a guidance suggests aftercare between 1- and 5-years post construction), with the aftercare deemed complete when the reinstatement standard has been achieved. The period of aftercare will be determined during the preparation of the SMP. It will be responsibility of the SCoW (or similar appointed person) to determine when the reinstatement standard has been met.

5.12 Monitoring

~~105.~~107. Audits of the soil management at the construction sites will be undertaken on a periodic basis and records will be maintained. The programme for monitoring and review will be devised and included in the SMP. An indicative monitoring schedule is included in Table 2.

~~106.~~108. The SMP will be reviewed periodically as required, and any required updates communicated to the relevant stakeholders.

Table 23: Indicative Monitoring Schedule

	What to Look For	Responsibility	Frequency
Soil Stockpiles	Erosion rills, water ponding, loss of protective vegetation, invasive weeds	Contractor	TBC
Soil Handling	Conformance with the SMP, record operations undertaken, weather and soil conditions, any problems and corrective actions undertaken	Contractor	TBC
	Conformance with the SMP, check daily record	ALO/SCoW	TBC
Verification of the reinstatement standard	Has the soil profile been reinstated, as much as practicable to do so, to a condition when last used for agriculture	SCoW	TBC
Aftercare reports	Significant differences in crop performance (including marketable yield), compaction and waterlogging between the reinstated and undisturbed land	TBC	TBC

Commented [PW11]: These are important for high quality vegetable cropping standards to be met

~~107.~~109. Annual reports will be prepared during the aftercare period. A minimum of one report will be prepared as the proposed minimum aftercare period is one year.

~~108.~~110. The aftercare report will contain results of appropriate ~~soil testing~~surveys, the SCoW or ALO will determine what ~~tests~~ surveys or testing~~are~~ is required and carry out the testing and record the soil condition, following methodology detailed within Section 2.4.

~~109.~~111. As a minimum ~~the testing~~surveys will comprise:

- visual assessment of plant cover and ground surface; and

- hand excavation of soil profile pits to assess the soil structure at depth and penetration by plant roots. These may be predominantly focussed on areas where the visual assessment indicates that there may be an issue with the quality of the reinstatement. Therefore, the density of soil profile pits will vary.

~~110.~~112. Non-conformance reporting, corrective actions, and incident responses are to be undertaken by the ALO according to the procedures described in the CoCP.

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Appendix 4 - Comments on The Applicant's Comments on Deadline 1 Written Representations

Comments on The Applicant's Comments on Deadline 1 Written Representations [REP3-038]

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

10. REP1-050 T.H. Clements & Son Limited

ID	Written Representations	Applicant Response	T.H. Clements Comment
	Mills & Reeve are retained by T.H. Clements and, further to submission of a Relevant Representation on 13 June 2024, have been instructed to make this Written Representation maintaining T.H. Clements objection to the Order. This Written Representation has been prepared in conjunction with the following experts appointed by T.H. Clements: ▪ Mr Phillip Wright of Wright Resolutions Limited (soil expert); ▪ Mr Iain Gould, Associate Professor of Soil Science at the University of Lincoln (soil expert); ▪ Mr Damian Pawson of Sweco UK (air quality expert); and ▪ Mr Daniel Jobe of Brown & Co. (surveyor). Appendices 1-4 to this Written Representation set out the qualifications and relevant experience of the above experts. This Written Representation builds upon T.H. Clements' Relevant Representation (RR) [RR-067].	The Applicant notes these comments.	
Overview of T.H. Clements business and operations			
1	T.H. Clements is a leading producer of high-end Brassica vegetables and supplies approximately 20% of the Brassica vegetables sold in the UK.	The Applicant understands and appreciates the scale of TH Clements' business and the overview included within this Written Representation has been noted. The Applicant also notes the obligations that TH Clements has to meet to fulfil its contracts. Further responses on the	
1.1	T.H. Clements has an annual turnover of approximately £80 million currently and is expected to achieve an annual turnover of circa £100 million within the next three years.		
1.2	T.H. Clements farms approximately 10,000 acres of rural land in Lincolnshire, including a significant proportion of the land affected by the proposed Project's onshore cable route, as explained below.		

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

1.3	T.H. Clements has spent decades building its business and has significant contracts with leading retailers, including Tesco plc.	potential for dust contamination of crops are provided below.	
1.4	Tesco plc. is a demanding retail customer which expects T.H. Clements to adhere to a service level of 98.5%. This high bar of expectation means that T.H. Clements are required to supply no less than 98.5% of the vegetable produce requested by Tesco on time and to specification. Failure to adhere to that service level would put the contract at significant risk.		
1.5	As part of the service level requirements, Tesco has exacting standards. These include a product specification ("Product Specification") which details the size, quality, flavour, appearance and shelf life that Tesco expects each type of vegetable to conform to. There are also very strict rules/requirements regarding defects, such as contamination by foreign bodies (stones, dust), discolouration, damage and the presence of insects, moulds or disease.		
1.6	Defects are generally unacceptable and will result in the rejection of product if outside agreed tolerances, save that in very exceptional circumstances, such as when Sahara sand storms lead to widespread, unavoidable deposits of sand on crops, very limited soiling may be tolerated.		
1.7	T.H. Clements has a dedicated team of Quality Assurance personnel whose role it is to ensure that each delivery meet's each customer's specification, and to identify and remove any non-conforming product.		
1.8	Any product rejections (whereby product doesn't meet the customer's specification), or shortfalls (where product supplied is less than the quantity ordered), would be detrimental to the achievement of the customer's required service level. As noted above, Tesco's		

	requisite service level is 98.5%, which is reviewed monthly and is used to monitor and track supplier performance.		
1.9	In the case of Cauliflower, for example, once the white curd is exposed i.e. near to maturity, dust/wind-blown soil can easily settle into the 'cracks' between the florets. If it then rains, this dust/soil is pushed further into the structure of the Cauliflower, which even consumers would find hard to remove. Similarly, dust/windblown soil can easily 'land' between the layers of Cabbages and Leeks as they grow, which can lead to them having a gritty texture. The growth stage of the crop is important, as if the edible portion of the vegetable has not developed the risk of contamination is lower. The nearer to harvest the crop is, the higher the risk of contamination and product not being suitable for harvest and sale.		
1.10	It is also well known that soil contains bacteria, some of which are pathogenic and have the potential to make consumers ill. As explained further below, it is not possible for T.H. Clements to try to remove soil/dust contamination because washing vegetables impacts their shelf life, as well as their appearance, contravening service level requirements meaning they will not be accepted by retailers. Whilst product packaging and general consumer guidance recommends that vegetables are washed thoroughly before use, as a responsible food producer, T.H. Clements has a duty to protect its product from contamination, and to protect its consumers from illness. Any potential risk that can be avoided, should be. It is not acceptable to place contaminated product into the market place, and T.H. Clements would risk prosecution and fines from Environmental Health & Trading Standards if food safety and consumer protection		

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

	requirements, such as those set out in section 14 of the Food Safety Act 1990, were not upheld.		
1.11	Crop losses at field level due to dust/soil contamination could result in significant quantity shortfalls against orders. Crops contaminated by soil/dust would be rejected by customers, such as Tesco. Rejections and shortfalls are viewed very negatively by T.H. Clements customers, including Tesco, as compliance with the agreed product specifications is required to ensure consumer satisfaction. T.H. Clements service level (performance) is compared to that of other suppliers, and poorly performing suppliers would be at risk of losing business and/or not being awarded new business.		
1.12	As a supplier to Tesco, T.H. Clements is responsible for ensuring that all products supplied are manufactured and packed in accordance with Tesco's Product Specification, technical policies and codes of practice. This restricts the procuring of product from third party suppliers unless they are fully compliant with customer policies and codes of practise.		
1.13	The Tesco Product Specification and supplier declaration documents set out the required Environmental, Social and Governance (ESG) standards which THC must be and are compliant in themselves (i.e. Red Tractor, LEAF), and which any third party supplier must be compliant with. T.H. Clements are not allowed to source product from third parties that are not ESG compliant.		
1.14	All of the above leads to the requirement for T.H. Clements to be one of the "World's best" growers. Underpinning T.H. Clements ability to achieve this, is the quality of land that it farms (please see below for more detail)		
Quality of land farmed by T.H. Clements			

Comments on The Applicant's Comments on Deadline 1 Written Representations [REP3-038]

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

2.1	The land that T.H. Clements farm (through which the proposed Project's onshore cable corridor is routed) comprises part of the Lincolnshire Fens, which are renowned as some of the very best food growing soils in the Country and indeed the World, largely comprising Agricultural Land Classification (ALC) Grade 1 land. To put this into context, only 7% of the land in the UK is Grade 1 ALC land, and over 70% of this Grade 1 land is in Lincolnshire around the Wash.	The Applicant notes TH Clements' comments on quality of land. The Applicant responded to the quality of land within The Applicants Responses to Relevant Representations (PD1-071, RR-67.002) .	In the Applicant's Responses to T.H. Clements' Relevant Representations [PD1-071, RR-67.002], the Applicant refers to the Outline Soil Management Plan [REP3-023]. T.H. Clements' comments on the Outline Soil Management Plan are contained in their response to question LU 1.7 of the ExA'S Second Written Questions (ExAQ2) [PD-020], and in appendix 3 to their Deadline 4 submissions.
2.2	The very best soils (commonly referred to as 'silts') are located to the south and east of the town of Boston (where T.H. Clements farm) and to the North East through Friskney to Wainfleet.		
2.3	Being permeable, when in good structural condition, these silts are able to absorb and store a significant amount of water, which makes them excellent soils for growing the very best vegetable crops. Their easy working qualities, including the absence of stone, further supports optimal root and therefore crop growth, with associated high marketable yields. It is because of the silts that T.H. Clements are amongst the "World's best" growers of brassica and root vegetables		
T.H. Clements interests in the land included in the proposed Order			
3.1	T.H. Clements farm a significant amount (approximately 753 acres/304ha) of land over which ODOW seek temporary possession and/or permanent compulsory acquisition powers for the Project ("Order Land").	Within the Applicants response to Relevant Representations [PD-071, 1.67], the Applicant confirmed that the area stated by TH Clements to be impacted by temporary possession and/or permanent compulsory acquisition powers for the Project is not 753 acres/304ha. Since the Applicant's response to Relevant Representations, the Applicant's land	T.H. Clements' comments on the Book of Reference [REP3-011], Statement of Reasons [REP3-014] and Land Plans [REP3-004] and [REP3-004] are contained in their response to ExA Q2 CA 1.1 [PD-020].
3.2	To enable T.H. Clements to confirm exactly which plots of the Order Land it farms as owner-occupier, tenant, or under another agreement with a landowner, T.H. Clements' appointed land agents, Brown & Co, asked ODOW to provide the base mapping/shapefiles for the Order Land Plans (ODOW Application Document 2.5). ODOW originally declined that request and after a number of further requests only		

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

	shared the shape files with Brown & Co on 23 October 2024, meaning that they could not be reviewed in time for Deadline 1 and submission of this Written Representation. The information below is therefore provided on the basis of an eye only comparison of the Land Plans and T.H. Clements land ownership/occupation plans and is as accurate as possible in the circumstances. Should any corrections need to made to the information below after review of the shape files, then these will be provided along with the Written Representation Summary by 27 November (in line with the Rule 8 letter):	agent has met with TH Clements land agent to cross reference the plots TH Clements own and occupy. The Applicant has reviewed these plots and has calculated that the total area of land owned and occupied by TH Clements impacted by the Order Limits is 151.66 acres. This figure includes the plots to in the response to 3.2.1 - 3.2.10 as omitted by TH Clements and also any land the Applicant deems not to be actively farmed, such as drains, copses and verges. With those areas that are not actively farmed removed, the Applicant has calculated the affected land within TH Clements' ownership or occupation as being 147	
Order Land Plots owned by T.H. Clements			
3.2.1	T.H. Clements own the freehold interest in the following Order Land Plots: (i) 29-009, 29-010, 29-011, 29-012, 29-013, 30-001, 30-002, 30-003, 30-004 and 30-006.	In response to 3.2.1 through to 3.2.10, The total plots have been reviewed between TH Clements' land agent and the Applicant's land agent, and the Applicant can confirm that the plots noted within this Written Representation omit to include some land owned by the Affected Party, namely plots 30-009, 30-010 and 30-	At the time of submission of T.H. Clements' Written Representation [REP1-050], clarification was awaited from T.H. Clements' appointed land agents as to whether plots 30-009, 30-010 and 30-011 were owned by T.H. Clements. T.H. Clements confirm that those

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

		011. All other plots as listed are agreed with ownership or occupation being as noted by TH Clements	plots are owned by T.H. Clements as per the Applicant's comment at para. 3.2.1 of its comments on T.H. Clements' Written Representation [REP1-050] Furthermore, the Table of Order Land Plots ("Plots Table") submitted by T.H. Clements at Deadline 2 has also be updated to include those plots. An updated version of the Plot Table comprises Appendix 5 to this Deadline 4 submission.
Order Land Plots owned by a Director of T.H. Clements, over which T.H. Clements Limited have a Farm Business Tenancy			
3.2.2	Christoper Clements (Director of T.H. Clements) owns the freehold interest in the following Order Land Plots: (i) 26-013, 26-015, 26-016, 26-017, 30-005, 30-007 and 30- 008	See response to 3.2.1.	See response to 3.2.1.
3.2.3	Barbara Clements owns the freehold interest in the following Order Land Plots: (i) 32-009, 32-010, 32-011, 32-012, 32-013, 32-014 and 32- 015.	See response to 3.2.1.	
Order Land Plots occupied and farmed by T.H. Clements on an annual rolling basis			
3.2.4	T.H. Clements occupy and farm the following Order Land Plots, the freehold interest in which is owned by third parties:	See response to 3.2.1.	See response to 3.2.1.

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

	(i) 30-012, 30-013, 30-014, 30-015, 30-016, 32-003, 32-004, 32-005, 32-008, 32-009, 32-010, 32-011, 32-020, 32-021, 32-022, 32-023,32-024, 32-025, 32-026, 33-001, 34-017, 34-018, 34-019, 34-020, 34-021, 34-022, 34-024, 35-004, 37-002, 37-003, 37-005 and 37-006.		
Order Land Plots farmed by T.H. Clements on a rotational basis			
3.2.5	T.H. Clements farm the following Order Land Plots on a rotational basis (i.e. they farm these Plots in rotation with other famers who grow other types of crops, such as cereals), the freehold interest in which is owned by third parties: (i) 33-017, 33-018, 33-019, 33-020, 33-021, 33-022, 33-023, 33-024, 33-025, 33-026, 33-027, 33-028, 33-029, 33-030, 33-031, 33-033, 33-034, 33-035, 33-036, 33-037, 34-017, 34-018, 34-019, 34-020, 34-021, 34-022, 34-024, 35-004, 37-002, 37-003, 37-005, 37-006, 37-012, 38-007, 38-008, 38-009, 39-001,39-002, 41-003, 43-005.	See response to 3.2.1.	See response to 3.2.1.
3.2.6	The Order Land Plot numbers, rotational arrangements and freehold owners are shown in the table below:	See response to 3.2.1.	
Order Land Plots farmed by T.H. Clements on a contractual basis			
3.2.7	T.H. Clements farm the following Order Land Plots under a contract farming arrangement with the third parties who own the freehold interest in them: (i) 27-001, 27-002, 27-003, 27-004, 27-005, 27-006, 27-007, 27-008, 27-009, 27-011, 27-013, 27-014, 27-015, 27-016, 27-017, 27-018, 27-019, 27-020, 27-021, 27-022, 27-023, 27-024, 27-025, 27-026, 27-027, 27-028, 27-029, 27-030, 28-001.	See response to 3.2.1.	See response to 3.2.1.
Presumed ownership of subsoil of part width of highway or drain			
3.2.8	T.H. Clements are the presumed owner of part of the following Order Land Plots on the basis of the 'ad medium filum' rule (the rebuttable presumption that the owner of the land abutting either side of a	See response to 3.2.1.	See response to 3.2.1.

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	highway, or a watercourse (drain), owns the subsoil up to the middle of that highway or watercourse): (i) 30-004 (part width of highway/access splay) and 30-006 (part width of drain)		
3.2.9	Christoper Clements (Director of T.H. Clements) is the presumed owner of part of the following Order Land Plot (comprising part width of highway) on the basis of the 'ad medium filum' rule: (i) 30-008	See response to 3.2.1.	
3.2.10	Barbara Clements (former Director of T.H. Clements) is the presumed owner of part of the following Order Land Plots (comprising part width of drain) on the basis of the ad medium acuae rule: (i) 32-009 and 32-010	See response to 3.2.1.	
Grounds of objection			
4.1 Alternatives (routing of onshore Export Cable Corridor ("ECC"))			
4.1.1	Paragraph 8 of the Department for Communities and Local Government's Guidance related to procedures for the compulsory acquisition of land under the Planning Act 2008 ("the CA Guidance") states that "the applicant should be able to demonstrate to the satisfaction of the Secretary of State that all reasonable alternatives to compulsory acquisition (including modifications to the scheme) have been explored". As such, it is necessary for ODOW to be able to demonstrate that alternatives to the use of compulsory acquisition powers, such as negotiating voluntary agreements with landowners, have been fully explored (i.e. that reasonable attempts to reach agreement have been made), but also that the chosen route of the ECC, and location of the Project's onshore substation (ONss)), can be robustly justified when compared to alternative routes/locations and	The Applicant has addressed the point raised on reasonable alternatives under the CA Guidance in response to question CA1.15 in The Applicant's Responses to The ExA's First Written Questions (ExQ1) (REP2-051). The Applicant has also provided a response on the alternatives to the chosen route for the ECC and the impacts on ALC grades in response to question LU1.2 of the ExA's First Written Questions.	T.H. Clements' comments on ECC alternatives are contained in their response to ExA Q2 LU 1.1 [PD-020].

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	the likely resulting physical, environmental and socio-economic impacts on them.		
4.1.2	As explained above, the land that T.H. Clements farms is affected by the ECC. Three main ECC route options are analysed in Chapter 4 of the Environmental Statement (Volume 1 Site Selection and Consideration of Alternatives and Table 4B.1 in Annex A, (ODOW Application Document Reference 6.1.4) and the Volume 2 (Figures) (Application Document Reference 6.2.4.1). Figure 4.20 sets out the three main options and quantitative analysis of them is provided principally in Table 4B.1 of Annex A.		
4.1.3	The first option ('Option 1', indicated by a blue line on Figure 4.20) originates at the landfall location at Wolla Bank, south of Anderby Creek, and follows a southerly direction, to the east of Burgh Le Marsh and Wainfleet All Saints, before crossing agricultural land to the south of the A52. The ECC then passes to the south of Boston, crossing the Haven, River Welland and A17. This appears to be the 'Wolla Bank-Weston Marsh' option in Table 4B.1 of Annex A.		
4.1.4	The second option ('Option 2', indicated by a purple line on Figure 4.20) originates from the landfall point north of Anderby Creek and takes a more northerly direction to the northwest of Burgh Le Marsh. The ECC then runs parallel to the Boston to Friskney rail line before passing around the north of Boston, and circumnavigating the town in an anticlockwise direction. This option then joins the ECC of Option 1 to the north of Fosdyke. This appears to be the 'Boston Northern Option' in Table 4B.1 of Annex A.		
4.1.5	The third option ('Option 3', indicated by a green line on Figure 4.20) follows the same route as Option 2 until it reaches Spilsby, at which point the ECC turns southeast to circumnavigate Boston in a clockwise		

	direction. This option runs to the west of the Hobhole Drain before joining the ECC of Option 1 to the north of Fishtoft. This appears to be the 'Boston Southern Option' in Table 4B.1 of Annex A.		
4.1.6	Although Table 4B.1 (in Annex A) has now been updated through an erratum, it remains poorly laid out and without a clear methodology. There remain errors within it.1 Notwithstanding ODOW's response [PD1-71, p.397 of 481], the underlying analysis is somewhat crude, detailing only the number of sensitive assets, or areas that have a sensitivity, without considering what the impacts would be and how serious they might be or weighing as between the rankings. In fairness, ODOW acknowledge this by stating that given the stage the work was undertaken at using the number of sensitive receptors that could be affected was an appropriate proxy of potential future impact. The problem is, though, the failure to engage further where problems are indicated.		
4.1.7	Of particular note and concern to T.H. Clements, is the fact that ODOW make no distinction in their analysis between different grades of Best and Most Versatile land ("BMV"); the different grades are equally weighted. ODOW's response on this point does not engage with T.H. Clements point – each grade given the same weight in the analysis despite the grades existing to identify differing levels of importance of agricultural land [PD1-071, p.38 of 481]. As such, ODOW's analysis does not properly reflect the likely impacts on agriculture and BMV.		
4.1.8	Choosing Option 2 (the purple route) would significantly reduce the amount of Grade 1 ALC land affected by the Project, and the majority of the Grade 1 ALC land that would be affected by this alternative		

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	route does not comprise the very top-quality silty soils situated to the east of the A52 public highway.		
4.1.9	Much of the land that would be affected by the Option 2 route is within the 'Downholland and Wallasea' soil series which, while sharing some characteristics of the best soils (being deep and stoneless silty clayey soils), are not capable of growing vegetable crops back-to-back in the way that the toft silts affected by Option 1 are. While the soils within the 'Downholland and Wallasea' series can be more difficult to work/farm than the silts, they tend to reinstate well post construction. Such soils also, being less fragile than the ALC Grade 1 silts, can better support machinery and there is therefore less risk of farm machinery sinking through them to deep levels. The Viking Link and Triton Knoll schemes were constructed through similar soils in recent years with the reinstatement being largely successful.		
4.1.10	While Option 2 is slightly longer than Option 1, it would affect less Grade 1 ALC land, result in significantly less crop loss, and in doing so would ensure that the highest quality, productive farmland and associated businesses is/are properly protected from adverse impacts (please see below for further detail regarding adverse impacts on soils and, in particular, silts).		
4.1.11	For the reasons set out above, it does not appear that the alternative routes for the ECC have been properly considered so as to enable ODOW to robustly justify their decision to proceed with Option 1.		
4.2 Adverse impacts on farming during construction of the proposed Project			
Nature of the soils comprised in the land that THC farm and proposed to be used for the cable route for the Project			
4.2.1	T.H. Clements farms land across Lincolnshire. However, the soils within the proposed stretch of cable corridor (working width) shown on the aerial view below are of particular significance:	The Applicant notes the information provided by TH Clements.	

Comments on The Applicant's Comments on Deadline 1 Written Representations [REP3-038]

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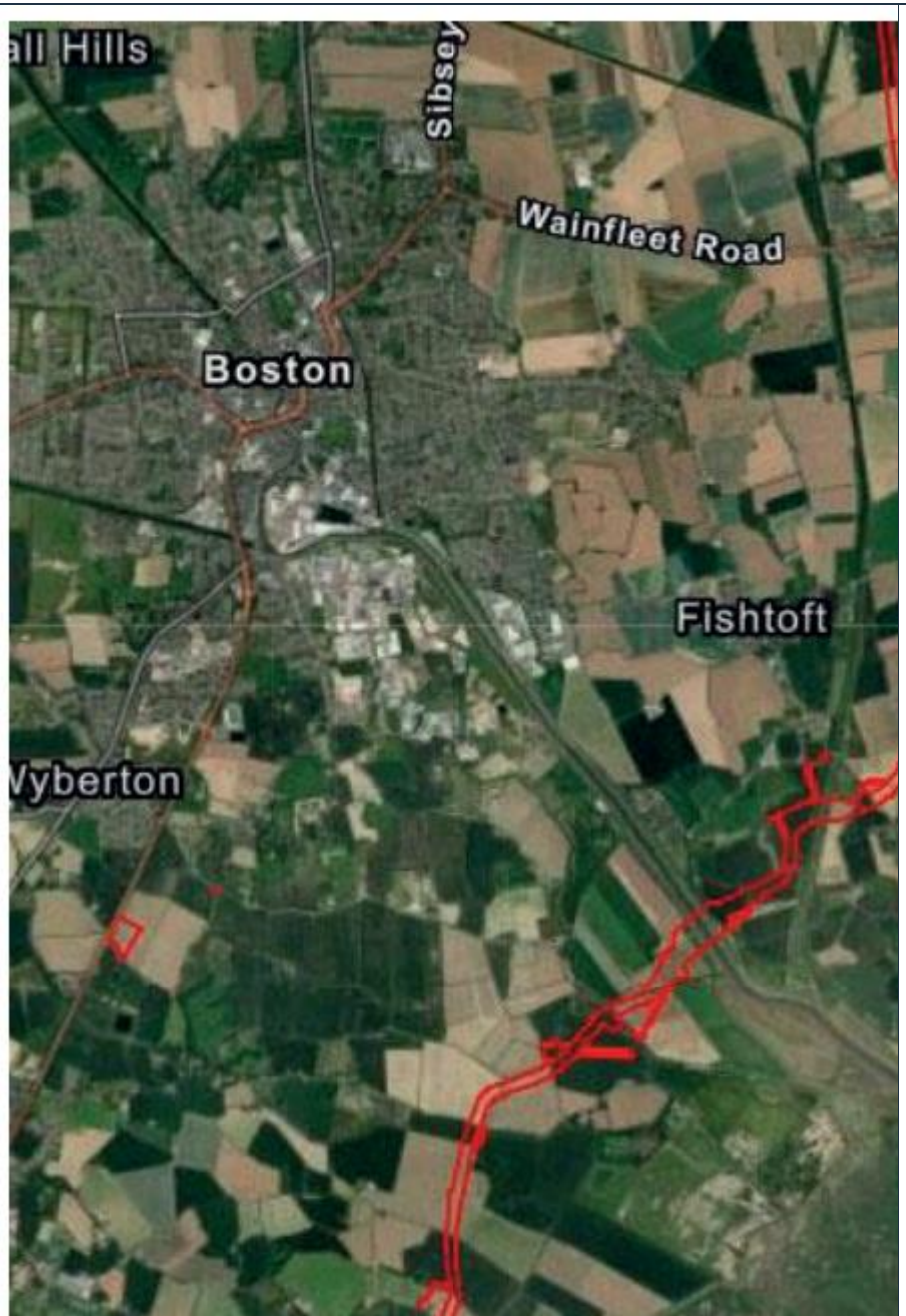

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

4.2.2	The soils along this stretch of the proposed cable corridor (working width) are deep, predominantly fragile silty, and coarse silt loam soils. These soils have drainage managed by ditches, pumps, and installed field drainage pipe schemes. The soils are at regular risk of machinery "falling through" (after becoming bogged down - often to significant depth) as a result of normal farming practices employed when growing vegetable crops intended for fresh supermarket sale in the UK. Please see the following sections for further detail.	The Applicant notes the information provided by TH Clements. The Applicant responds to the more detailed points on the risk of machinery "falling through" below.	
Predominant soil types			
4.2.3	The predominant soil types affected by the proposed cable route in the following locations (shown on the above map, and detailed in Appendix 5) are as follows: i. WISBECH: Deep stoneless, calcareous, coarse, silty soils and is flat with low ridges and at risk of wind erosion locally. Groundwater levels are usually controlled by ditches or pumps. ii. TANVATS: Deep stoneless, fine and coarse silty and clayey soils and is flat. Groundwater levels are usually controlled by ditches or pumps. iii. ROCKCLIFFE: Deep stoneless silty and sandy soils and is flat. It is variably affected by groundwater depending on the artificial underground drainage systems in place.	The Applicant outlines the coastal soils of Lincolnshire in section 3 of the Outline Soil Management Plan (document reference 8.1.3, version 3). The Applicant has provided a copy of the oSMP to TH Clements for their review and comments. TH Clements have committed during the Issue Specific Hearing 3, to provide this markup by Deadline 3 and the Applicant committed to submitting a revised oSMP by Deadline 4 if appropriate.	T.H. Clements' comments on the Outline Soil Management Plan are contained in their response to ExA Q2 LU 1.7 [PD-020], and in appendix 3 to their Deadline 4 submissions.
4.2.4	As explained above, the predominant soils in this area of Lincolnshire are deep, and stoneless with unsupportive, fragile and deep silt based characteristics. Where the soil is at moisture saturation level, i.e. nearing a "liquid" state, this increases the risk of 'running'/movement of the soils, hence their being referred to colloquially as 'running silts'.	The Outline Soil Management Plan (document reference 8.1.3, version 3), acknowledges the stoneless and silty nature of the soils in Section 3 Coastal Soils of Lincolnshire.	

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	All the soils in this area of Lincolnshire are deep, which results in an increased risk of machinery 'sinking' into / dropping through, the soil profile until 'grounded' by the chassis being in contact with the ground surface, as explained in further detail which follows.		
4.2.5	Fields being farmed for vegetable crops intended for supermarket fresh produce sale need to be accessed at various times including when the soil condition is wet, and consequently very vulnerable to damage. Such soils are also prone to surface waterlogging at wetter times of year. To avoid significant crop loss (and mitigate against the yield, quality, and delivery penalties imposed by retailers), significant surface waterlogging is addressed immediately by digging deep channels (also referred to as 'trenches') to move such water off the surface and into surrounding watercourses. Such channels can often exceed depths of 1m below the ground surface, depending on distances involved.	The Applicant notes TH Clement's concern regarding the digging of deep channels to a depth of circa 1m. The Applicant has via voluntary agreements secured a mechanism whereby landowners can carry out activities such as trenching deeper than 0.75m with the Applicants prior consent. Since Issue Specific Hearing 3, the Applicant's and TH Clements' representatives have engaged in review of relevant drafting of restrictive covenant wording to give the consent that is being offered in the voluntary agreements but have not yet reached a conclusion and expect to do so before D4; in the meantime to limit risk of confusion the Applicant has not sought to amend the draft DCO in this respect.	T.H Clements' comments on cable burial depth and the potential implications are contained in their response to ExA Q2 LU 1.8 [PD-020].
4.2.6	It is noteworthy that the proposed depth of the Project's onshore cables stated as being 1.2m below ground surface level. ODOW specify a maximum working depth for farming operations of 0.75m	The Applicant is aware of TH Clements concerns around cable depth and the Applicant has provided their position	T.H. Clements concerns regarding cable burial depth remain as per its Relevant

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	above cables buried at a depth of 1.2m, without needing permission from ODOW and specialist supervision. This maximum depth is significantly shallower than the depths of potential interference and damage as a result of the carrying out of routine farming practices (further detail on this is included in the following sections). Additionally, the interventions used by farmers (including extracting machinery where bogged down, digging trenches, and associated deep soil loosening) which would be needed for soil repair do not appear to have been considered as part of the proposed mitigation for the Project.	on this within the Applicants Response to Relevant Representations RR067.020 [PD-071]. Furthermore, the Applicant is aware of the interventions required by farmers where machinery becomes bogged down and the Applicant has therefore ensured that there is a mechanism in place for cultivations or operations that may be required deeper than 0.75m. The landowner or occupier can contact the Applicant to obtain permission to go deeper. It may be that these works will have to be supervised however this is all to ensure the health and safety of those working above the cables. The Applicants Response to Relevant Representations RR067.021 (PD-071) sets out the depths of cultivations witnessed onsite by the Applicant over land which TH Clements farm. The Applicants position remains that the cable depth of 1.25m is acceptable and covers all aspects of	Representation [RR-067], Written Representation [REP1-050], and response to ExA Q1 LU 1.17 [REP2-079]. T.H. Clements' further comments on cable burial depth and the potential implications are contained in their response to ExA Q2 LU 1.8 [PD-020].

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		day to day farming. To confirm as per The Applicants Responses to the ExA's First Written Questions (ExQ1, Q1 LU 1.17, (REP2-051)), a cable burial depth of 1.25m will mean the cable protection tile will be buried at 1.2m.	
Potential contamination and degradation of high quality, highly fertile top-soil within T.H. Clements farmed plots during construction of the Project			
4.2.7	As explained above, the silty soils within T.H. Clements farmed plots (through which the Project's onshore cable corridor is routed) are largely unique to this particular area of Lincolnshire. They are deep, predominantly fragile, silty and coarse loamy silts. They are highly fertile and productive for agricultural farming, comprising a shallow layer (approximately 300-700mm deep), or layers of highly fertile 'topsoil', below which is a 'subsoil' or relatively sterile 'running silt' which, whilst it has reduced fertility, provides a reserve of water. The relatively complex nature of these soils can increase variability within the topsoil zone which can include differing textures (a silt loam with variable sand content), and differing organic matter/nutrient levels.	The Applicant notes the information provided by TH Clements and can confirm that mitigation measures to prevent mixing of different soil types and management of storage bunds have been included within The Outline Soil Management Plan (document reference 8.1.3, version 3).	T.H. Clements' comments on the Outline Soil Management Plan are contained in their response to ExA Q2 LU 1.7 (ExQ2) [PD-020], and in appendix 3 to their Deadline 4 submissions.
4.2.8	These soils are delicate, and susceptible to structural change, particularly following heavy rainfall. Effective, and unrestricted drainage of these soils is therefore of paramount importance.		
4.2.9	During the proposed construction phase for the Project, ODOW propose to strip the topsoil and subsoil in this location and store it in soil bunds. This will enable installation of the underground electricity cables. The storage bunds will be susceptible to weed growth and contamination, and, during the stripping and reinstatement phases, there is a high risk of the topsoil and subsoil being mixed. This risk		

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	would be particularly acute should the appointed contractors not to be cognisant of the unique nature of the soils. Any mixing of the topsoil and subsoil will change the nature of the topsoil from its status as existed before the construction phase. Subsoil is primarily a reservoir for water, as opposed to the fertile topsoil having high nutrient holding capacity and stability afforded by organic matter and biological activity. Dilution of the topsoil by the subsoil, therefore, as a result of mixing, would compromise crop growth, and consistency, and as a result, crop quality and marketable yield.		
4.2.10	The variability within the topsoil (as evidenced in Foxholes Field – see Appendix 5) included differing texture, and organic matter levels from the soil surface down to 0.7m.	The Applicant notes the information provided by TH Clements and has updated the oSMP (document reference 8.1.3, version 3) to include reference to the three soil horizons namely top soil , upper subsoil and lower subsoil at Deadline 3 and how these will be effectively managed during construction.	T.H. Clements' comments on the Outline Soil Management Plan are contained in their response to ExA Q2 LU 1.7 (ExQ2) [PD-020], and in appendix 3 to their Deadline 4 submissions.
4.2.11	This is important, as both differing layers of topsoil contained high volumes of crop roots which will access water and nutrient from these zones. The upper layer (in Foxholes field this was down to 0.4m) of this topsoil zone is regularly inverted (ploughed) and is likely to contain a high proportion of nutrient available to the crop. This is due to plant residues remaining after harvest, including discarded crop (falling outside the standards required) which are mixed into this upper layer by cultivation and ploughing. In turn, this provides nutrition to the following crops as it decays. Such relatively shallow nutrient is more immediately available to plants as their roots develop. In turn, this can influence crop growth, and maturity. i. Routine Tillage below this plough level by loosening and similar non-inversion operations provides a good structure for root growth, and water permeability (to help drainage).		

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	This tillage creates a secondary layer of "Topsoil" below the upper layer, which sits on top of the relatively more sterile subsoil below. ii. Not differentiating such topsoil zones (by stripping the entire topsoil as one layer) therefore will result in mixing upon reinstatement, which risks degrading the nature of the uppermost topsoil zone present. TH Clements anticipate that such degradation would: iii. Result in a marketable yield loss in this area of the field of up to 40%. iv. Lead to crop inconsistencies (affecting maturity) which, at the most severe, would write off these areas when harvesting takes place. The severity of this will depend on many factors including crop type, the growing season, and weather.		
4.2.12	Soil quality may also be compromised as a result of field conditions during cable installation. When soils are wet, for example, they have reduced mechanical strength, and are more vulnerable to damage by compaction when they are moved, or trafficked. The soils on land used to construct haul roads and construction compounds would likely be compromised by compaction. In such cases, crop consistency (quality) issues may occur as a result which could take many seasons to overcome. This is because soil loosening operations only create fissures in compacted soil, Over time, the action of growing roots and other biological processes open up, and stabilise these "fissured zones", leading eventually to a situation of well aggregated, stable, and porous soil which is then capable of supporting the crops being grown	The Applicant acknowledges within section 5 of the oSMP (document 8.1.3, version 3) that "trafficking and incorrect handling can damage the structure of the soils through over-compaction" and provides a list of guidance to be adhered to in order to minimise the risk of degradation to soil. The final soil management plan to be produced in accordance with Requirement 31 of the draft DCO (document 3.1, version 6) must accord with the oSMP therefore	T.H. Clements' comments on the Outline Soil Management Plan are contained in their response to ExA Q2 LU 1.7 (ExQ2) [PD-020], and in appendix 3 to their Deadline 4 submissions.

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		adherence to the guidance referred to is secured.	
4.2.13	Notably, the Outline Soil Management Plan submitted with the DCO application (ODOW Application Document 8.1.3) is a high level document. T.H. Clements does not currently have any confidence that the special nature of the silts (soils) in this location of Lincolnshire have been properly understood and assessed by ODOW such that the mitigation measures are sufficient to prevent soil quality from being compromised. Particular concerns include: i. **Running Soils (section 3.2)** acknowledges that "Digging in this material becomes difficult because the fine sandy material can 'run' into the excavation, so that the excavation becomes wider but no deeper"… "The Construction of trenches in these materials will require detailed engineering design and process to ensure that suitable construction methods and mitigations are in place". No explanation is given as to how ODOW consider it will be possible to ensure the stability of trenches via engineering methodology particularly given the depths of current drainage systems and the fact that the storage of soil in close proximity to trenches would put increased pressure on already unstable soils and likely result in collapse Section 3.3 acknowledges the predominance of unstable soils is exactly where the top quality soils (those farmed by T.H. Clements) are located. ii. **Haul Road (Section 4.4).** Where running soils are involved, the use of aggregate material to create haul roads (as	The Applicant is confident that the oSMP is fit for purpose and fulfils its purpose in setting out principles and procedures for general good practice mitigation for soil management during the onshore construction works to minimise the adverse effects on the nature and quality of the soil resource and takes into account the nature of the soils within the Order limits. The Applicant has provided a copy of the oSMP to TH Clements for their review and comments. TH Clements have committed during the Issue Specific Hearing 3, to provide this markup by Deadline 3 and the Applicant has committed to submitting a revised oSMP by Deadline 4 if appropriate once it has considered the suggestions made by TH Clements.	T.H. Clements' comments on the Outline Soil Management Plan are contained in their response to ExA Q2 LU 1.7 (ExQ2) [PD-020], and in appendix 3 to their Deadline 4 submissions.

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	proposed) is unlikely to create stability so as to prevent soils from 'running' under the pressure created by the movement of construction vehicles. There is no detailed consideration of this issue. iii. **General Soil Handling Principles (Section 5.1).** Soil handling methodologies based on industry recognised principles for the handling of running silts are notably absent. Liquid soil conditions were, for example, found at 0.9m depth in a field being harvested by T.H. Clements on 4 June 2024. Such conditions require cessation of construction as a matter of principle. If such conditions exist at depth in a normally drier time of year, it is difficult to understand how the proposed Principles can be met; more-so during wetter times of the year. The opportunities for moving soils only in a dry and friable condition are extremely limited, and there is a high risk of construction machinery becoming 'bogged down' at wetter times. iv. **General Soil Handling Principles (5.1).** The soil is generally sub-divided into "Topsoil" and "Subsoil". This is also described in 5.7 (soil stripping). Detailed examination of the profile in Foxholes Field (see Appendix 5) showed the presence of two layers within the Topsoil zone to 0.7m. It is not clear how, or if, any distinction is planned to be made in this respect. The applicant has not clarified that this situation can exist on these silt loam soils, or how to address it.		

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	v. **Management of "Running Sand" (Section 5.2).** The location of running sand channels, which can be relatively narrow, is likely to require a closer investigation density than one per 100m. Soil variability is evidenced by differential sinkage of roads installed over such soils including the A16 and others to the East and South of Spalding, and the A1101 either side of Wisbech. The following picture is typical of such a road where differential sinkage is clear at distances of circa 20m or less apart. Additionally, the depth of "soil" is defined as 1.2m (see paragraph 4.3.1 far below). This, in practice, may vary. vi. **Adverse weather (Section 5.3).** The third bullet point in paragraph 47 states that "If sustained heavy rainfall (eg. >10mm in 24 hours) occurs, soil handling operations must be suspended. Soil operations must not restart until the ground has had at least one full dry day, or an agreed moisture criteria of the soil can be met". At soil running depth, infiltration of such defined "heavy rain" could take far longer (2 or more days), depending on the moisture status before the rainfall, and the field drainage status. vii. **Adverse weather (Section 5.3).** Paragraph 48 states that "When a rainfall event forces the suspension of soil handling operations, the active strip should be stripped to the basal layer (i.e. measured topsoil depth) before cessation of works". It is unclear how the need for such soil movement then complies with the requirements in paragraph 47.		

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	viii. **Drainage (Section 5.6).** Paragraph 63 states "…several post construction design techniques will be considered dependant "[sic]" on individual landowner requirements". In the case of the land farmed by T.H. Clements, reinstatement to pre-construction standards is required, for example, to allow for jetting of pipes on a routine basis – refer to detailed comments on pages 17 to 22, and Appendix 6. ix. **Soil storage (Section 5.8).** The proximity of storage bunds to trenches (see first point above) on these unstable soils, means that the risk of running is a concern. Also, paragraph 74 states that "Topsoil can be stored on either topsoil (of the same type) or on subsoil". Topsoil stored on subsoil increases risk of contamination (mixing) of these during subsequent soil reinstatement. The high vegetable crop quality standards required of T.H. Clements rely on soil consistency – including maintaining the topsoil in its pre-construction state x. **Stockpile Maintenance (Section 5.9).** Paragraph 78 explains that soil stored for over 6 months will have a cover crop sown to protect against erosion, minimise soil nutrient loss, and maintain soil biological activity. Concerns in respect of this proposal include: a. Soil stored for less than 6 months, which will not have a crop cover, will be highly vulnerable (in the case of the silt loam soils in question) to erosion by wind and water.		

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	b. A cover crop sown onto stored subsoil will have compromised (by virtue of delayed, less vigorous, or reduced plant populations) establishment (i.e. the initial stage of germination and growth) due to the poor nutritional content of the subsoil – a key reason not to mix this with topsoil as outlined in previous points. xi. **Reinstatement (Section 5.10).** Paragraph 94 states that "For the land in agricultural use before construction this means that the soil is brought as close as reasonably practicable to the physical state it was before construction". The exacting standards of crop quality and consistency required of T.H. Clements rely on all aspects of the soil condition (physical, chemical and biological) being optimal to ensure crop marketable yield is not compromised. All field areas involved in construction therefore are at risk of non-compliance to meet the standards required. It is not known how long (if at all) such a reinstatement process will take. Further detailed consideration will be needed.		
Potential contamination of high quality, highly fertile topsoil with stones			
4.2.14	As explained above, the Lincolnshire Fens are renowned as some of the very best food growing soils in the Country and indeed the World, being characterised by a number of factors including the complete absence of naturally occurring stone.	The Applicant has at Deadline 3 updated the oSMP in section 2.4 and section 5.10 to include specific reference to stone contamination to address the points raised in this Written Representation by TH Clements.	T.H. Clements' comments on the Outline Soil Management Plan are contained in their response to ExA Q2 LU 1.7 [PD-020], and in appendix 3 to their Deadline 4 submissions.
4.2.15	Stoneless soils are of significant benefit to farmers growing vegetable crops, as they allow uniform growing throughout the soil profile (allowing the growth of, for example, straight root crops), and		

	minimise the amount of crop rejection by retailers, who are often unwilling to purchase (or will only purchase at a significant discount), vegetable crops that have been distorted by stone-on-root contact. Stoneless soils therefore give growers confidence that they will be able to produce the quality of crop that their consumers require.		
4.2.16	A number of underground electricity cables have been installed across Lincolnshire in recent years. The large-scale linear infrastructure schemes known as 'Triton Knoll' (the Triton Knoll Electrical System comprising the onshore connection for the Triton Knoll Offshore Wind Farm) and the 'Viking Link' (the UK onshore element of the National Grid Viking Link Interconnector scheme), for example, both utilised a stone haul road within (along) the construction (cable installation) 'working width' to facilitate movement of machinery and materials in changeable ground conditions, whilst minimising compaction. Comprising of crushed stone and installed directly onto geo-textile laid on top of the subsoil, the haul road is designed to prevent the crushed stone from being integrated into the underlying and adjacent soils, and to allow easy removal of the haul road material prior to restoration and reinstatement of the topsoil.		
4.2.17	In practice, however, the use of geo-textiles has not prevented stone transferring off the side of the haul road during use and mixing with the soils adjacent. This is due in part to insufficient geo-textile width being used or low-quality material. In addition, haul road removal creates significant levels of contamination of sub-soils as the mechanical movement of stone leads to tearing and failure of the geo-textile layer which deposits stone on unprotected and inevitably trafficked and disturbed subsoils. Removal of this stone is either by		

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	excavator which results in additional sub-soils being removed or alternatively by hand.		
4.2.18	Unfortunately, both of these methods of 'making good' are fallible. Hand picking stone left on subsoils has not been wholly effective with a percentage being left behind that is either buried through the haul road removal process or missed due to being stone/soil mix. The alternative approach of removing a layer of subsoil beneath the haul road to 'catch' any stone contamination results in large quantities of subsoil being removed, lowering field levels and resulting in drainage problems. Any stone that is left behind will naturally make its way through the topsoil to the surface of the land in subsequent years, as a result of usual farming practices, reducing the quality of root crops (by deformation caused by root-on-stone contact).		
4.2.19	The need to remove stone by hand is a time-consuming burden, which rests with farmers for years following the completion of construction and 'restoration' of land by promotors.		
4.2.20	Appendix 7 to this written representation, includes (with permission from the various farmers) a. a list of farmers whose land was affected by the Triton Knoll and Viking Link schemes, and who attest to the description of residual stone contamination and its consequences set out in paragraphs 4.2.16 to 4.2.19 (above); b. the contents of an email exchange between one of those farmers and Daniel Jobe of Brown & Co which the farmer has asked that we include;	The Applicant notes the information submitted within Appendix 7. Please see the Applicant's response to 4.2.14 above which sets out how updates have been made to address this issue and in order to minimise and mitigate the risk of this happening as part of the construction of the Project.	See response to 3.2.1.

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	c. photographs provided by another of those farmers showing stone contamination left post construction of the Viking Link project; and d. newspaper article extracts, including from the Lincolnshire Free Press dated 22 October 2024 entitled "Farmer puts out warning after his land is 'decimated' by cables".		
4.2.21	Section 8.1.5.6 (paragraphs 222- 228) of Chapter 3 (Project Description) of the ES (ODOW Application Document 6.1.3) discusses the haul road. Paragraph 222 states that "the haul road, typically 6.8m wide (Plate 8.1) (see above) (and up to 9m at passing places) including verges and drainage channels (where required) will extend the entire length of the Project onshore ECC and 400kV cable corridor (except where the Project has committed to not construct a haul road, such as in locations where trenchless techniques will be adopted)…It will be utilised throughout the installation of the export cables and 400kV cables and for the duration of the onshore ECC construction activities." We note that paragraph 190 of Chapter 3 of the ES states that "Installing the onshore cable ducts and export cables is anticipated to take up to 42 months.")	The Applicant is unable at this stage to commit to a single aggregate specification. The Aggregate type will be to a minimum type, as outlined in table 6.1 of the Department of Transport Manual Contract for Highway Works) Series 600 earthworks standard for highways. The Applicant has, as part of their assessment, assessed the maximum dust emission magnitude for construction activities so has therefore assessed dust on a worst case basis. The final Air Quality Management Plan will be based off final design and will ensure that the appropriate mitigation measures are put in place based on the aggregate type used.	T.H. Clements' comments are contained in their response to ExA Q2 LU 1.3 and LU 1.6 [PD-020].
4.2.22	Paragraphs 226 to 228 of Chapter 3 of the ES states that: "The haul road will comprise a maximum thickness of 1m (average 0.6m) of suitable aggregate placed on top of a heavy-duty terram membrane or similar where required. The exact specification of the road will be determined upon the appointment of a principal contractor at detailed design stage. Depending upon the ground conditions, it may not be necessary to undertake works to construct the designated haul road. Where the		

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	ground is sufficiently firm enough it may be acceptable to use significantly less granular sub-base material. Consideration will also be given to alternatives such as a specialist trackway if appropriate. The final decision will depend upon ground conditions and the contractor's preferred construction strategy and will not be confirmed until the detailed design stage. Any aggregate and/or geotextile membrane installed will be removed, and the land reinstated upon completion of the construction phase."		
4.2.23	It is notable that reference is made to "suitable aggregate material" but there is no assessment of the impacts attributable to the types of aggregates which may be used. Type 2 aggregate for example is typically made from crushed rock and has a higher dust content than Type 1 aggregate.		
4.2.24	Constant use of a haul road constructed from "suitable aggregate" by large vehicles and equipment, particularly in wet conditions, could lead to crushed limestone, stones and rock being washed, or otherwise transported (by vehicle wheels, or on other vehicle components) onto the adjacent land (outside of the 'working width') contaminating the top soil of adjacent fields.		
4.2.25	Stone contamination is a very significant concern to T.H. Clements as, for the reasons set out above, it would have a direct adverse impact on their ability to grow top quality vegetables on the plots of land affected, which in turn would be likely to result in a higher percentage of crop rejections by retailer customers, associated financial losses and unnecessary food waste.		
4.2.26	We note that paragraph 227 states that, "Consideration will also be given to alternatives such as a specialist trackway if appropriate." The use of aluminium trackway would remove the requirement to use	A temporary haul road system such as a trackway and other methods will be considered as the Applicant	

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	aggregate (stone), ensuring that there is no residual stone left on the land post construction. The use of aluminium trackway (or equivalent) should at least be secured in replacement of aggregate in the Code of Construction Practice.	progresses into detailed engineering. However, the Applicant cannot commit to a single haul road method at this early stage as the detailed engineering has not commenced, and many factors must be considered, to allow for safe systems of work, vehicle movement, preventing damage to the ground strata, dust, reinstatement, etc. Factors to be considered include the nature/capacity of the bearing ground, supply chain reliability, maintenance (when in use), vehicle axle loads, rate of vehicle movement, duration of use (short/long term), etc.	
Contamination of and damage to growing crops by dust from construction activities			
4.2.27	The RR identified the contamination of, and damage to, growing crops by dust from construction activities as a potential impact from construction activities as a potential impact of the Project [RR-067, pp.14-15]. The RR stated that there is a "…direct significant risk that, as a direct result of the Project construction activities, T.H. Clements will not be able to fulfil its retailer contracts and could incur significant penalties and potentially lose these strategically important contracts, which it would struggle to regain once lost".	In response to the report produced by T.H. Clements' representatives, the Applicant has undertaken a review of the dust modelling report produced by Sweco, and found that, in summary, its assessment and associated outcomes are pessimistic and inherently unreliable given that it: ▪ **Contradicts Prevailing Technical Guidance**: The	T.H. Clements' comments on dust contamination are contained in their response to ExA Q2 LU 1.6 [PD-020].
4.2.28	Subsequent to submission of the RR, T.H. Clements commissioned a detailed dust deposition study to assess the potential for growing crops within land owned by T.H. Clements to be adversely impacted		

	by fugitive dust emissions from the phased construction activities relating to the proposed Project.	overall approach, including the use of emission factors and dispersion modelling, is not recommended for use in this context by the Institute of Air Quality Management (IAQM) – the UK's recognised professional body for air quality professionals. ▪ **Includes Several Critical Modelling Issues:** There are critical issues associated with the assessment execution and modelling parametrisation, including: ▪ The assumption of continuous construction activity; ▪ The use of unvalidated emission factors for the UK climate; ▪ The absence of model validation; ▪ Misrepresentation of the Project Description; and ▪ Inappropriate execution of wind erosion modelling. The Applicant has arranged a meeting with TH Clements on the 8th January	
4.2.29	The study was completed by Damian Pawson, a Technical Director of Air Quality at Sweco. Damian benefits from over 18 years of professional experience, having graduated from Lancaster University in 2006 with a First Class Honours degree in Environmental Science and is a Full Member of the Institute of Air Quality Management (MIAQM). Damian has extensive experience in completing dispersion modelling studies for large-scale opencut mining projects where deposition of dust was a primary concern, requiring detailed analysis of dust emissions sources and the development of emissions inventories with reference to best practice international guidance (see Appendix 4 for Damian's CV and bio).		
4.2.30	The comprehensive detailed technical report that has informed this summary of potential dust deposition impacts on T.H. Clements' land is presented in Appendix 14 to this Written Representation.		

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		2025 to discuss the Applicant's position regarding the dust modelling provided among other topics and has prepared a report which provides a detailed response on the methodology and outcomes of the dust deposition study appended to TH Clements' Written Representation to share with TH Clements and inform that discussion. The Applicant reserves their position to provide that detailed response to the ExA at D4, if necessary. Under Requirement 18 of the draft DCO, the Outline AQMP will be refined into Final AQMPs for each onshore transmission section, incorporating detailed construction data once the Principal Contractor is appointed. At this stage, the measures will be further refined to reflect technical and consultation feedback. The Applicant is keen to resolve the concerns of T.H. Clements, and has committed to a further meeting on 8th	

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		January 2025, to include their respective air quality experts, to discuss their submission and seek a mutually agreeable resolution.	
Sensitivity of Land Farmed by T.H. Clements			
4.2.31	In fulfilling significant contracts with leading retailers, T.H. Clements is required to meet stringent minimum quality requirements, in line with the General Marketing Standard (GMS), applicable to each type of vegetable.	See response 4.2.27	See response to 4.2.27
4.2.32	With respect to dust soiling (deposition), the minimum quality requirements within the GMS states that products shall be "…clean, practically free of any visible foreign matter" subject to allowed tolerances.		
4.2.33	Further to this, T.H. Clements customer specifications adopt a zero tolerance approach to visible dust on produce, deeming it unacceptable for purchase. Exceptions may be allowed for natural disasters/weather events, such as the episodic atmospheric transport and widespread deposition of Saharan dust over the UK. In such events, a temporary specification may be applied, but this provides no guarantee that the produce would be accepted by the customer.		
4.2.34	Given that the dust likely to be generated by the Project's activities will be associated with the disturbance of topsoil and subsoil layers within the onshore cable route corridor, deposited dust is likely to be dark in colour. Therefore, the Brassica vegetables may present a surface that will provide a contrast to the deposited dust (e.g. white cauliflower curd, light green leaves of cabbage and Brussels sprout,		

	white/green parts of leek). This could result in deposited dust becoming visible at low levels of deposition.		
4.2.35	The shape and form of Brassicas are such that any deposited dust could accumulate / be retained within various parts of the crop as they grow (e.g. layers and leaves of cabbage, leek, Brussels sprout; surface of cauliflower curd; surface of broccoli floret). The potential accumulation of dust would not only increase dust visibility but could also lead to discolouration / spoiling of the vegetable such that it does not meet GMS3 minimum requirements.		
4.2.36	The Brassicas grown on T.H. Clements' land are subject to differing growing seasons, maturation periods, and are harvested at varying times throughout the year. As such, T.H. Clements's land has the potential to be sensitive to dust deposition throughout all months of the year.		
Identifying a Dust Deposition Assessment Benchmark			
4.2.37	In this study, a benchmark represents a dust deposition rate, expressed as mass per unit area per unit time (e.g. grams (g)/m²/month). Areas where dust deposition are above this benchmark are considered to have the potential for visible dust accumulation.	See response 4.2.27	See response to 4.2.27
4.2.38	An annual dust deposition benchmark would not be appropriate for this study, as crops are grown and harvested at different times throughout the year. Therefore, the dust deposition benchmark needed to consider shorter-term periods (i.e. daily and/or monthly) to align with farming activities and recognise the potential for visible dust to accumulate on crops over short timeframes.		
4.2.39	In the absence of statutory dust deposition standards in the UK, a range of national and international guidance and best practice		

	documents were reviewed to establish an appropriate benchmark for this study.		
4.2.40	In the UK, a "custom and practice" dust nuisance guideline of 200 milligrams (mg)/m2 /day is widely adopted for general dust deposition. This is acknowledged by the Environment Agency as being limited in that it is "…simply a custom and practice yardstick and it was never based on actual dose-response data…", being referred to as a "…complaints likely guideline for receptors located in residential areas and outskirts of towns", as per Vallack and Shillito (1998).		
4.2.41	In Germany, TA Luft assigns a higher deposition guideline value of 350 mg/m2 /day for the "…protection against significant nuisances or significant disadvantages due to dustfall…".		
4.2.42	Both UK and German guideline values are not wholly applicable to this study, given the rural location of T.H. Clements' land and the sensitivity of the crops to dust deposition, as dictated by the GMS minimum quality requirements.		
4.2.43	However, the Vallack and Shillito (1998) study, which is the paper referenced by the Environment Agency, also suggested a "complaints possible" guideline range for "open country" of between 80 mg/m2 /day and 100 mg/m2 /day. This implies that dust may become visible at lower deposition levels		
4.2.44	Similarly, whilst the Scottish Government's Planning Advice Note 50 (Para. 28, Annex B)11 references the above UK and German guidelines, it recognises the potential for dust to become visible at much lower levels of deposition:		

	"…guideline values in the range 200 - 350 mg/m2/day have been variously used for mineral sites. It should be noted that the nature of deposit can influence strongly the perception of nuisance. For example, black coal dust which has a high contrast with its background may cause complaints if deposited at a rate in excess of only 80 mg/m2/day."		
4.2.45	In Australia, the New South Wales Environmental Protection Authority (NSW EPA) has established a criterion of 2 g/m2 /month for maximum 'project-only' contributions and 4 g/m2 /month for the maximum total including background deposited dust. This equates to 65 mg/m2 /day and 130 mg/m2 /day, respectively. NSW EPA state that these criteria "…must be reported as the 100th percentile" (i.e. maximum monthly deposition).		
4.2.46	Queensland Government references a guideline value of 120 mg/m2 /day, which sits within the ranges established by NSW EPA.		
4.2.47	In New Zealand, the Ministry for the Environment good practice guide sets a recommended guideline of 4 g/m2 /month, which aligns with the upper value given by the NSW EPA. However, this document also references that the nature of dust may also be relevant, such that visible soiling can occur at lower deposition rates, stating that "…some highly sensitive residential areas may find deposition rates of 2 g/m2 /month (above background levels) objectionable and offensive…".		
4.2.48	In this study, the potential for annoyance / nuisance is not being assessed per se. T.H. Clements are required to provide produce that is, as a minimum, "…clean, practically free of any visible foreign matter". Failure to meet this requirement is likely to result in the affected produce being rejected, resulting in reduced harvested yields and associated revenue losses.		

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4.2.49	Therefore, the benchmark(s) for this assessment needs to be sufficiently stringent to recognise the sensitivity of the growing fields and the nature of the Brassica crops. As this study focusses on the Project-only dust contribution from construction activities, the benchmark(s) should align with the more stringent deposition criteria referenced above.		
Dust Deposition Benchmarks applied in this Assessment			
4.2.50	Based on the above review, there is agreement across national and international guidance that visible dust can accumulate at relatively low rates of deposition, particularly where the dust is dark in colour and the receiving surface presents a contrast.	See response 4.2.27	See response to 4.2.27
4.2.51	Considering the nature of the Brassica crops and the stringent minimum quality requirements for visible matter, the following benchmarks were adopted for this assessment: (i) Daily dust deposition benchmark: 80 mg/m2 /day (ii) Monthly dust deposition benchmark: 2 g/m2 /month		
4.2.52	These benchmarks were compared to the results of the dust deposition modelling completed as part of this study, focussing on the Project contribution only. In addition, it was also important to assess the frequency at which these benchmarks might be exceeded within T.H. Clements' land (e.g. number of days and/or months per year that the benchmarks are exceeded, if at all).		
4.2.53	In this study, an exceedance frequency of 120 days or more per year (compared to the daily benchmark) or a frequency of four or more months per year (compared to the monthly benchmark) is considered to represent a high risk of dust accumulation on T.H Clements' land.		
4.2.54	In practice, visible accumulation could occur over much shorter timescales, due to the sensitivity of Brassica crops, the time of year		

	(i.e. crop maturity), and variations in the intensity of dust emissions. As such, a modelled exceedance frequency of 30 days or more per year, or one month or more per year, cannot be completely disregarded.		
4.2.55	However, in the context of the limitations and assumptions for this study – as set out in detail Appendix 14 (Section 5, Technical Report: Dust Deposition Modelling) and summarised in paragraphs 4.2.90 to 4.2.115 below – on the balance of probability, a modelled exceedance frequency at or above 120 days or four months (i.e. 33% of the year or more) indicates a high likelihood that the impacted area of land will experience visible dust accumulation (termed as 'high risk').		
4.2.56	Overall, the above frequency thresholds are considered appropriate to highlight the risk of visible dust accumulation on T.H. Clements' land without being overly conservative. As such, the likelihood of deposited dust impacting T.H. Clements' ability to produce crops in line with customer requirements could be assessed.		
Overview of Assessment Methodology			
4.2.57	A detailed account of the assessment method, which included development of a dust emissions inventory and dust deposition modelling for the Project construction activities, is provided in Appendix 14 (Section 4, Technical Report: Dust Deposition Modelling).	See response 4.2.27	See response to 4.2.27
4.2.58	Information contained within the Applicant's Environmental Statement and associated documents, as per Project's Examination Library15, was relied upon. Additional information was requested via an email submitted by Brown & Co. (on behalf of T.H. Clements) to the Applicant on 5 July 2024. A record of the requested information		

	and the Applicant's response, where applicable, is given in Table 1 below.		
4.2.59	Where the requested information was not provided by the Applicant and/or not contained within the Application Documents, justified assumptions were made in completing the dust deposition assessment, as cross-referenced in Table 1 below.		
Study Area			
4.2.60	The spatial scope of this study was determined based on the locations of fields farmed by T.H. Clements that are near to the proposed Project Order Limits. The section of the Order Limits included in the study area equates to approximately 48,300 m in length. The study area extent is shown in Figure 1 of Appendix 14.	See response 4.2.27	See response to 4.2.27
4.2.61	The study area captures segments 5 to 14 inclusive of the onshore cable route corridor, as shown in Figure 3.3.1 of Application Document 6.2.3 (Examination Library reference APP-089). All construction activities included in the dust deposition modelling were assumed to occur within a 'typical working width' of 80 m within the Order Limits (Para. 32, page 22 of Application Document 6.1.3 Chapter 3 Project Description; Examination Library reference APP-058).		
4.2.62	For clarity, the land owned by T.H. Clements that falls within the Order Limits was excluded from the study area, given that it would not be possible to farm this land (i.e. no crops present to be impacted by deposited dust).		
Proposed Project Construction Phasing			
4.2.63	The onshore cable route construction will comprise five phases (Para. 188, Page 84 of Application Document 6.1.3 Chapter 3 Project Description; Examination Library reference APP-058):	See response 4.2.27	See response to 4.2.27

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	i. Pre-construction works ii. Enabling works iii. Cable infrastructure installation iv. Cable installation v. Reinstatement works & demobilisation		
4.2.64	Since the pre-construction works will be non-intrusive (Paras. 195-198, Pg. 85-86 of Application Document 6.1.3 Chapter 3 Project Description; Examination Library reference APP-058) and cable installation works will not include particularly dusty activities (Para. 256, Pg. 100 of Application Document 6.1.3 Chapter 3 Project Description; Examination Library reference APP-058), this study focuses on the potential dust emissions from these three phases: i. Enabling works ii. Cable infrastructure installation iii. Reinstatement works & demobilisation		
4.2.65	The construction period for the above phases is anticipated to take up to 42 months (Plate 11.1, Page 117 of Application Document 6.1.3 Chapter 3 Project Description; Examination Library reference APP-058).		
4.2.66	However, the main construction compounds and temporary access roads are expected to be in use for up to 36 months (Tables 8.2 and 8.3, Pages 87-88 of Application Document 6.1.3 Chapter 3 Project Description; Examination Library reference APP-058). The Applicant also assumes that 100% of the haul road will remain in place for up to 36 months in any one location, except for the section between the A52 and the Landfall compound (outside the study area) (Para. 257, Page 101 of the same document).		

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4.2.67	Based on this and given the study area does not cover the full onshore cable route, the dust emissions inventory and modelling assumed that each of the three construction phases will last up to 12 months, totalling 36 months. This study also assumed that the haul road will be in use for the entire duration of these phases.		
Dust Emissions Inventory			
4.2.68	Dust emissions for each identified construction activity were calculated by multiplying an emission factor (a value that represents how much dust is typically produced by that activity) by the rate at which the activity is carried out over time, such as: $$Dust\ Emission\ (kg/year) = Activtiy\ Emission\ Factor\ (kg/tonne) \times Activity\ Rate\ (tonnes/year)$$	See response 4.2.27	See response to 4.2.27
4.2.69	The relevant construction activities were identified based on information from the relevant Project application documents, as outlined in Table 2 (below).		
4.2.70	The activity-specific emission factors were calculated using equations referenced in United States Environmental Protection Agency (US EPA) AP-42 guidance and Australian National Pollutant Inventory (NPI) Emission Estimation Technique Manuals (EETMs).		
4.2.71	There is a lack of UK-based or European Environment Agency (EEA) dust emission factors for the activities included in this study. However, both EEA18 and New Zealand guidance cite the use of AP-42 and NPI emission factors when completing a detailed analysis of emissions from construction. The emission factors published by both are acknowledged as		

	"…the most widely used and extensive data on emission factors".		
4.2.72	US EPA AP-42 factors are frequently used in developing emissions inventories in the UK, including the National Atmospheric Emissions Inventory (NAEI)21. Furthermore, both AP-42 and/or Australian NPI factors have been cited in UK-based dust assessments.		
4.2.73	The emission factor equations used in this assessment are detailed in Table 4-3 of Appendix 14 (Page 18, Technical Report:Dust Deposition Modelling).		
4.2.74	The use of these emission factors represents a precautionary approach, such that the total dust emissions derived in the inventory for this study may be overestimated. This is because the typical environmental conditions for which these factors were derived (i.e. warmer, drier climates in Australia and the USA) differ from the more temperate climate of the UK.		
4.2.75	To minimise uncertainty, all efforts have been made to use emission factors that rely on local and site-specific variables, rather than adopting a universal 'default' emission factor. These variables, along with associated assumptions, are provided in Table 4-3 of Appendix 14 (Pages 19-22, Technical Report: Dust Deposition Modelling) and summarised in paragraph 4.2.101 below.		
4.2.76	The activity rate for each construction activity, along with the data sources and assumptions, are detailed in Table 4-4 of Appendix 14 (Pages 24-29, Technical Report: Dust Deposition Modelling). Where possible, data and assumptions specific to the Project and local area have been applied to ensure the robustness and validity of the inventory, in line with the reasoning set out in the above paragraph.		
Dust Control (Mitigation) Factors			

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4.2.77	The above section defines the approach taken to develop a dust emissions inventory without dust control measures being in place. An uncontrolled emissions inventory is likely to represent an overly precautionary assessment, particularly as the Applicant has submitted an Outline Air Quality Management Plan (Application Document 8.1.2; Examination Library reference APP270) and Outline Soil Management Plan (Application Document 8.1.3; Examination Library reference APP-271).	See response 4.2.27	See response to 4.2.27
4.2.78	To provide a balanced assessment, an emissions inventory with dust control measures was developed for comparison with the uncontrolled inventory. The dust control factors, sourced from US EPA AP-42 and/or Australian NPI EETMs, were applied based on the proposed dust control measures for the assessed construction activities.		
4.2.79	The dust control factors included in the 'With Dust Control' emissions inventory are detailed in Table 4-5 of Appendix 14 (Page 31, Technical Report: Dust Deposition Modelling).		
4.2.80	The use of these control factors optimistically assumes that all mitigation measures will be put in place and effective from the beginning of each activity. Additionally, these measures are assumed to be applied consistently throughout the entire duration of the activity. The below paragraphs provide an example to explain why this might be an optimistic assumption.		
4.2.81	A key dust source during construction is likely to be wind erosion of the topsoil and subsoil bunds. A control efficiency of 40% (NPI EETM) 17 has been applied to wind erosion from soil bunds and other exposed surfaces within the Order Limits. This is to align with the proposed 'seeding' of exposed soil bunds (Paras. 78-82, page 22 of		

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	Application Document 8.1.3 Outline Soil Management Plan; Examination Library reference APP-271).		
4.2.82	The 40% control factor assumes that this level of control applies for the duration of exposure (i.e. 12 months in each phase). However, paragraph 78 of the Outline Soil Management Plan states "…where soil is to be stored for over 6 months it will be covered or sown over the top and sides with an agreed seed mix to protect the soil against erosion…". Additionally, paragraph 218 of Chapter 3 Project Description (Page 90 of Examination Library reference APP-058) states that "…subject to the time of year/weather conditions, stockpiles may be required to be covered until the seeding has germinated and to prevent windswept particles". Accordingly, it is not clear that this form of mitigation is proposed always to be applied.		
4.2.83	The soil description of the Wisbech Association soils farmed by T.H. Clements, for example, specifically refers to these being "…at risk of wind erosion locally". This refers to the soil when in a natural state, not in raised bunds. which will dry out and be at even greater levels of risk as a result.		
4.2.84	This is supported by an analysis of soils in a field within the study area conducted by soil experts Dr Iain Gould (University of Lincoln) and Philip Wright (Wright Resolutions Ltd) on 4 June 2024. They noted that the soils lack strength/cohesion, which could make soil bunds very loose, erodible, and susceptible to wind erosion. Furthermore, the subsoil is unlikely to be sufficiently cohesive or nutrient-rich (lacking in organic material) to support vegetation cover as a means of reducing wind erosion potential.		
4.2.85	In the absence of details regarding when and where soil stockpiles will be covered and seeded, as well as the germination period and		

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	effectiveness of the seeding, a consistent control efficiency of 40% is considered to be potentially optimistic.		
Dust Emissions Inventory Summary: Without & With Control Measures			
4.2.86	The dust emissions inventory for both 'Without Dust Control' (i.e. no mitigation) and 'With Dust Control' (i.e. with mitigation) is summarised in Table 4-6 of Appendix 14 (Page 32, Technical Report: Dust Deposition Modelling). The total mass dust emissions were calculated on a 'per year' basis in each construction phase for the Order Limits in the study area.	See response 4.2.27	See response to 4.2.27
4.2.87	In each phase, the main contributing emission activities were calculated to be wind erosion from soil bunds and/or exposed areas, and wheel-generated dust from construction vehicle movements on the haul road. This applied to both the 'Without' and 'With' dust control inventories.		
Atmospheric Dispersion Modelling			
4.2.88	Dust deposition modelling was undertaken using the US EPA regulatory-approved AERMOD dispersion model. AERMOD is widely recognised by UK statutory bodies such as Defra and the Environment Agency as a valid tool for assessing air quality impacts, including dust deposition. The model is particularly useful for assessing how pollutants (dust) spread and settle over time, considering local weather conditions, such as wind speed and direction, temperature, and atmospheric stability.	See response 4.2.27	See response to 4.2.27
4.2.89	Details of the modelling methodology are provided in Section 4.3 of Appendix 14 (Pages 35-43, Technical Report: Dust Deposition Modelling). A summary of the key model inputs and parameters are provided below: i.Study area:		

	a. The modelled study area was the same as the area depicted on Figure 1 of Appendix 14 (Technical Report: Dust Deposition Modelling). ii. Meteorological data: a. Five years of hourly weather data (2019-2023) were obtained for a 4 km x 4 km grid square centred near Freiston, Lincolnshire. These data are representative of weather conditions throughout the study area. Year 2021 was selected as an appropriate year for use in the model. iii. Modelled dust emissions: a. The activities in the emissions inventory were modelled in AERMOD, based on their location within the cable route corridor, which aligned with a typical 80 m working width inside the Order Limits. Two model scenarios were run to align with the dust emissions inventory, namely: 1. Scenario 1: 'Without Dust Control' 2. Scenario 2: 'With Dust Control' b. The annual mass emission totals were converted to a 'per second' emission rate for input to the model based on the modelled source dimension for each activity. The dust emission rates were distributed evenly across each modelled source. c. A summary of the modelled emission rates and source characteristics is provided in Table 3 below.		

	An overview of the modelled dust emissions sources configuration is depicted in Figure 3 of Appendix 14 (Technical Report: Dust Deposition Modelling). iv.Time-varying emissions: a. The core working hours for the proposed Project construction period are 7am to 7pm, Monday to Saturday (Para. 146, page 64 of Application Document 6.3.26.3 Appendix 27.1 Transport Assessment; Examination Library reference AS1-086). b. Therefore, all modelled emissions sources, except for wind erosion sources, were 'active' during working hours only (7am-7pm; Mon-Sat) for all weeks of the year. For all other times, including Sundays, emissions from these sources were assumed to be zero. v.Modelled dust particle sizes a. In modelling dust emissions, AERMOD allows the input of location-specific particle size information. For this study, information compiled by Dr Iain Gould (University of Lincoln) and Philip Wright (Wright Resolutions Ltd) were provided and used, based on analyses (i.e. 'particle size distribution' and 'hand texturing' of soil samples) completed in June 2024 within a field inside the study area. vi.Modelled receptors:		

	a. A total of 3,779 discrete receptor points was modelled within the fields owned by T.H. Clements in the study area, representing some 1,388 hectares of land. These receptors were modelled at varying resolutions up to a maximum distance of 1 km from the Order Limits. The receptors wereconcentrated within the fields closest to the Order Limits (i.e. within 500 m), given the potential for maximum dust deposition to occur at these locations b. The receptor locations are depicted on Figure 3 of Appendix 14 (Technical Report: Dust Deposition Modelling). vii.Model outputs: a. Dust deposition was modelled at all receptors during each phase of construction. The modelled dust deposition outputs were expressed as dust mass deposited over a unit area per unit time (i.e. g/m2/day and g/m2/month) to align with the assessment benchmarks (as above). b. A summary of the modelled dust deposition outputs for each discrete receptor in the model is provided in Table 4 (far below). c. The modelled maximum dust deposition impacts across all land owned by T.H. Clements within the study area were analysed, along with the corresponding frequency of exceedances, in each phase of construction.		

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	d. The modelled frequency and spatial extent of exceedances were used to assess the likelihood of deposited dust adversely impacting T.H. Clements' ability to produce crops in line with customer requirements.		
Limitations and Assumptions			
4.2.90	A detailed collated account of the limitations and assumptions applicable to this study is provided in Section 5 of Appendix 14 (Technical Report:	See response 4.2.27	See response to 4.2.27
Construction Phasing			
4.2.91	A construction programme with details on phasing, dates, and approach to incremental excavation and backfilling of cable trenches was not available at the time of assessment (see Table 1 above).	See response 4.2.27	See response to 4.2.27
4.2.92	Based on provisional information included within the Project Description (Application Document 6.1.3 Chapter 3 Project Description; Examination Library reference APP-058), this assessment has assumed that the Enabling Works; Cable Infrastructure Installation; and Reinstatement & Demobilisation phases will each require up to 12 months (i.e. combined total of 36 months) and that the haul road will remain in use throughout all three phases.		
4.2.93	On this basis, the results of each of the three construction phases were considered separately (i.e. not combined or considered cumulatively). This approach ensured that no double-counting of dust emissions occurred.		
4.2.94	In reality, construction is likely to be progressed in sections along the cable route corridor, which means that some activities from the Cable Infrastructure Installation and Demobilisation & Reinstatement phases are likely to overlap before moving to the next section (Paras.		

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	189-192, page 84 of Application Document 6.1.3 Chapter 3 Project Description; Examination Library reference APP-058).		
Construction Activities			
4.2.95	All potential dust-generating activities were identified from a review of the relevant Application Documents, as per Table 2 above.	See response 4.2.27	See response to 4.2.27
4.2.96	The activity rates for each of the identified construction activities were derived, where possible, based on project-specific information and/or information specific to the study area to minimise uncertainty in the development of the dust inventory. Where required, appropriately justified assumptions were made, as summarised in Table 5 below, with a detailed account provided in Table 4-4 of Appendix 14 (Pages 24-29, Technical Report: Dust Deposition Modelling)		
4.2.97	The activity rates used in developing the inventory were applied on a 'per year' basis given the approach adopted to construction phasing (i.e. assumed 12 months per phase).		
4.2.98	The emissions inventory for wheel generated dust from haul road HGV movements was based on average daily movements across an assumed 42-month construction period (Paras. 146-147 and Table 27.28, Pages 65-66 of Application Document 6.3.26.3 Appendix 27.1 Transport Assessment; Examination Library reference AS1-086). The table of AADT movements (Table 27.28) also includes the "maximum daily trip generation", which equates to a significantly higher number of HGV movements.		
4.2.99	The maximum AADT data were not used in this study to avoid an overly precautionary assessment, given the assumptions applicable to construction phasing, with emissions calculated based on a 12-month period for each phase. However, the maximum HGV movements on		

	the haul road would be likely to generate significantly higher levels of dust relative to the average movements, albeit over relatively shorter periods of time.		
Emission Factors for Dust Generating Activities			
4.2.100	The dust emission factors applied in this study were derived using equations referenced in the US EPA AP-4216 and Australian NPI EETMs17. As noted, these factors represent a precautionary approach because the typical environmental conditions for which these factors were derived differ relative to the UK.	See response 4.2.27	See response to 4.2.27
4.2.101	To reduce uncertainty, local data and relevant assumptions were applied when deriving the emission factors, including: i. Wind speed and rainfall statistics based on five years of hourly weather data representative of the study area. ii. Representative soil information (moisture content, silt content, bulk density, particle density) provided by soil experts, Dr Iain Gould (University of Lincoln) and Philip Wright (Wright Resolutions Ltd), based on local in-situ surveys completed in June 2024, though it is acknowledged that the values provided will vary throughout the study area. iii. A moisture content of 15% for potential haul road aggregate was assumed, ensuring the dust emissions factor was not overly conservative (i.e. 15% likely to be high for aggregate; a higher moisture content results in a lower dust emission) iv. A representative silt content of 9% for potential haul road aggregate (e.g. MOT Type 1), which assumes that soil dust of a higher silt content will not settle on the haul road and		

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	be re-suspended. (i.e. potentially optimistic in that dust emissions could be higher than modelled). v. The assumption that all HGV movements will be completed by a 20 tonne tipper (Volvo FM420 8x4 Tipper). vi. For open cable trenches, a 50% dust control factor was applied in the 'Without dust control' inventory to reflect the natural sheltering effect of having exposed surfaces below ground-level.		
4.2.102	In terms of general soil handling, the Applicant has stated in the Outline Soil Management Plan (Para. 39, page 50, para. 50, page 19, and para. 67, page 21 of Application Document 8.1.3; Examination Library reference APP-271) that *"…where practicable, soils will only be moved when they are in a dry and friable condition…".* The emission factor equations for soil excavation, transfer, and backfilling activities incorporate a 30% moisture content for both topsoil and subsoil.		
4.2.103	The 30% value was based on sampling completed on 4 June 2024 by Dr Iain Gould (University of Lincoln), which found the subsoil to be moist at the time of sampling. Dr Gould noted (email dated 17 July 2024) that *"…a working topsoil would be less than this…"*,with soils in the study area described as *"…lacking strength/cohesion…"*, such that it *"…could make stockpiles very loose and erodible…"* as the moisture content reduces.		
4.2.104	Therefore, applying a 30% moisture content for topsoil and subsoil to these activity equations likely provides an optimistic estimate of dust emissions (i.e. higher moisture content leads to lower dust emission), specifically within the context of the above soil handling principles.		

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Dust Control (Mitigation) Factors			
4.2.105	The 'With Dust Control' emissions inventory was developed as outlined in paragraphs 4.2.77 to 4.2.85 above. The assessment optimistically assumed that all mitigation measures will be implemented effectively from the start of the activity and consistently applied throughout its duration to maintain control efficiency.	See response 4.2.27	See response to 4.2.27
4.2.106	Given the nature of the soil and handling principles described above, the efficacy of measures such as watering during soil excavation, loading/unloading, and seeding of soil bunds may be limited. An analysis of subsoils typical to the study area, completed by Dr Iain Gould (University of Lincoln) and Philip Wright (Wright Resolutions Ltd) in June 2024 andSeptember 2024, suggests that the subsoil is unlikely to be sufficiently cohesive or nutrient-rich (lacking in organic material) to support vegetative cover as a means of reducing wind erosion potential.		
4.2.107	However, the potentially reduced efficacy of such control measures has not been accounted for in the assessment, maintaining an optimistic assessment of total dust emissions.		
4.2.108	It was deemed appropriate to ensure a level of optimism (i.e. promoting lower emissions) was preserved in this study to balance the precautionary (i.e. promoting higher emissions) use of emission factors derived from US EPA AP-4216 and/or Australian NPI EETMs17. This ensured that the model outputs would be less likely to skew towards either an over- or under-prediction.		
Atmospheric Dispersion Modelling			
4.2.109	Although AERMOD is a well-validated model, its predictions may not always completely align with real-world conditions. This is because there can be uncertainties linked to emission factors, weather data	See response 4.2.27	See response to 4.2.27

	used in the model, as well as the simplified way it represents how the atmosphere works. In this study, information specific to the Project and local area have been used to minimise these uncertainties as far as possible.		
4.2.110	It is rare to have enough observational data to fully validate model results in a statistically meaningful way. This applies to this study, given the absence of local dust monitoring data to compare against and that the Project has not started.		
4.2.111	The model simulates dust particle suspension, transport, and deposition based on generic assumptions about particle size distribution (PSD), wind speed, and surface characteristics, which may not always reflect local realities. However, this study has utilised: i. Hourly meteorological data representative of the study area. ii. Representative PSD from sampling of soil undertaken on 4 June 2024 within a field adjacent in the study area (source: Dr Iain Gould, University of Lincoln). iii. Given that the exact specification and composition of the haul road cannot be determined at this stage, the PSD data were assumed to apply to the haul road emissions sources in AERMOD.		
4.2.112	In the absence of location-specific construction activity information, the dust emission rates for each activity were evenly distributed across the respective modelled areas within a typical 80 m working width inside the Order Limits. However, wheel generated dust emissions from the haul road were proportioned according to the HGV movements in each discrete segment of the cable route, as per		

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	Table 27.28 of Page 66 of Application Document 6.3.26.3 Appendix 27.1 Transport Assessment (Examination Library reference AS1-086).		
4.2.113	A limitation of the modelling approach is that it may not fully capture the fluctuations in dust levels caused by the 'stop-andstart' nature of construction, overlapping of construction phasing, equipment uses, and vehicle movements. This limitation is driven by the nature of construction activities and availability of information specific to each phase and activity. For example, intense emissions over short periods and prolonged periods of inactivity are not captured, which could lead to occasional under or over-predictions of dust deposition.		
4.2.114	Not all the dust-generating activities included in the model are likely to occur continuously over a twelve-month period along the entire length of the Order Limits. For this reason, the annual dust deposition flux was not assessed as a model output.		
4.2.115	Modelling dust emissions in isolated phases, using averaged emission rates across the Order Limits provided a suitable approach for assessing dust deposition over shorter time periods (24-hour/monthly). This ensured that the assessment accounted for varying weather conditions and associated fluctuations in dust deposition throughout the year		
Dust Deposition Modelling: Results & Analysis			
4.2.116	The results of the dispersion modelling study, both 'Without' and 'With' dust control measures, were reviewed in each modelled construction phase period. A comprehensive review and analysis are presented in Section 6 of Appendix 14 (Pages 49-58, Technical Report: Dust Deposition Modelling).	See response 4.2.27	See response to 4.2.27

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4.2.117	The extent of maximum dust deposition exceedance areas in each phase, in addition to the exceedance frequency, are visualised in Figures 5 to 28 in Appendix 14 (Technical Report: Dust Deposition Modelling Appendix B). However, a select number of these are replicated in Appendix 13 (Dust Deposition Plots), as referenced below		
4.2.118	The main outcomes of the analysis are presented here, within the context of the below benchmarks and exceedance frequency thresholds identified for daily and monthly dust deposition: i. Daily dust deposition benchmark = 80 mg/m2 /day a. Exceedance frequency threshold: 120 days or more per year b. Monthly dust deposition benchmark = 2g/m2 /month c. Exceedance frequency threshold: 4 months or more per year		
4.2.119	A summary of the model results within the context of the above criteria are presented in Table 6 below, based on the modelled maximum dust deposition rate and the exceedance frequency.		
Summary of Modelled Maximum Dust Deposition			
4.2.120	In each phase and in both the 'Without' and 'With' dust control scenarios, the exceedance area based on modelled maximum dust deposition consistently exceeds 100 ha of T.H. Clements' land. This applies to both the daily and monthly modelled deposition fluxes, except for the maximum monthly deposition in the 'With Dust Control' scenario, where the exceedance area is 66 ha.	See response 4.2.27	See response to 4.2.27
4.2.121	When focussing on the 'With Dust Control' scenario and modelled maximum daily deposition, the exceedance area ranges from 220 ha		

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	(Demobilisation & Reinstatement) to 395 ha (Enabling Works). The maximum daily deposition exceedance area in the Enabling Works phase is depicted on Figure 13.1 within Appendix 13.		
4.2.122	In the same scenario, the equivalent maximum exceedance area for monthly deposition ranges from 66 ha (Demobilisation & Reinstatement) to 171 ha (Cable Infrastructure Installation). The maximum monthly deposition exceedance area in the Cable Infrastructure Installation phase is depicted on Figure 13.2 within Appendix 13.		
4.2.123	In each phase, the main dust-generating activities relate to the wind erosion sources (soil bunds and exposed areas, in addition to wheel-generated dust (HGV movements on haul road). Whilst the HGV movements are modelled to be consistent throughout each phase, there is a distinct reduction in wind erosion sources in the Demobilisation & Reinstatement phase, due to the reinstatement of subsoil and topsoil within the Order Limits. This explains the clear decrease in maximum exceedance areas reported in this phase.		
Summary of Dust Deposition Benchmark Exceedance Frequency			
4.2.124	When changing focus to the modelled exceedance frequency, it is evident that the area of T.H. Clements' land subject to an exceedance frequency of equal to or above 120 days (compared to the daily benchmark) and 4 months (compared to the monthly benchmark) are of a similar magnitude.	See response 4.2.27	See response to 4.2.27
4.2.125	In the 'With Dust Control' scenario: i. Daily benchmark exceedance frequency >120 days per year; a. A high risk of visible dust accumulation is predicted across 94 ha (Cable Infrastructure		

	Installation); 85 ha (Enabling Works); and 26 ha (Demobilisation & Reinstatement) of T.H. Clements' land, respectively. b. The daily benchmark exceedance frequency plot for the Cable Infrastructure Installation phase is shown on Figure 13.3 within Appendix 13. ii. Monthly benchmark exceedance frequency >4 months per year; a. A high risk of visible dust accumulation is predicted across 107 ha (Cable Infrastructure Installation); 97 ha (Enabling Works); and 33 ha (Demobilisation & Reinstatement) of T.H. Clements' land, respectively. b. The equivalent monthly benchmark exceedance frequency plot for the Cable Infrastructure Installation phase is shown on Figure 13.4 within Appendix 13.		
4.2.126	The same level of agreement between the daily and monthly exceedance frequencies is evident in the 'Without Dust Control' scenario, but with the modelled exceedance area being at a notably greater magnitude (see Table 6 above). This is exhibited on Plate 1 below (daily dust deposition: 'Without' vs 'With' control) and Plate 2 below (monthly dust deposition: 'Without' vs 'With' control).		
4.2.127	For the reasons detailed in the 'Limitations and Assumptions' section, it is appropriate that the conclusions of this assessment focus on the 'With Dust Control' scenario, given that the 'Without Dust Control' results are likely to represent an overly cautious prediction.		

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4.2.128	However, with reference to paragraph 4.2.54 (above), the thresholds applied for defining a 'high risk' of visible dust accumulation are relatively lenient (i.e. >120 days or >4 months) and the application of dust control factors is potentially optimistic (see paragraphs 4.2.80 to 4.2.85 above). Therefore, it is possible that the impacted area of T.H. Clements' land will be of a magnitude that is between the upper ('Without Dust Control') and lower ('With Dust Control') modelled outcomes presented in Table 6 above.		
Conclusion on Dust Contamination			
4.2.129	The assessment has demonstrated that a significant area of T.H. Clements' land would be at high risk of receiving dust deposition at a rate and frequency that could lead to visible dust on growing Brassica crops.	See response 4.2.27	See response to 4.2.27
4.2.130	This risk is particularly relevant during the Enabling Works and Cable Infrastructure Installation phases of construction, especially on land closest to the Order Limits. Therefore, T.H. Clements' ability to produce crops in line with customer requirements is likely to be compromised in these areas. The affected areas extend materially beyond the red line of the Project		
4.2.131	As explained above, T.H. Clements customers have very exacting quality standards and will not accept vegetable produce contaminated by dust. It would not be possible for T.H. Clements to try to remove the dust contamination as washing vegetables impacts their shelf life, as well as their appearance, contravening service level requirements meaning they will not be accepted by retailers.		
4.2.132	There is therefore a significant risk that, as a direct result of the Project construction activities, T.H. Clements will not be able to fulfil		

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	its retailer contracts and could incur significant penalties and potentially lose these strategically important contracts, which it would struggle to regain once lost.		
Severance			
4.2.133	During construction of the proposed Project it would not be possible to farm the land occupied/being utilised for that purpose by ODOW (i.e. the 'working width', construction compound areas and temporary accesses). T.H. Clements are concerned that, as a result of the occupation/use of the 'working width', compound areas and temporary accesses, parts of fields that they farm that are not directly affected by the working width, compounds and accesses (i.e. land out with the Order land) may become inaccessible or be too small to farm by itself.	The Applicant notes TH Clements comments with regard to severance of land and responded to this within the Applicants response to Relevant Representations RR067.019 [PD-071] within which the Applicant confirmed that their assessment of severed land amounted to 23.9 acres. This initial assessment has been based on the maximum design scenario and when final design is available, the Applicant will liaise with landowners to agree severed land. The Applicant also stipulated the following within their response: '*Where land is severed, the applicant will compensate the landowner for losses incurred as a direct result. The Applicant would seek to agree any severance with TH Clements prior to construction when a detailed design is available.'*	T.H. Clements' comments on severance are contained in their response to ExA Q2 LU 1.4 [PD-020].
4.2.134	Order Land Plots 27-015/27-019; 27-021; 27-027; 27-030; and 29-013/30- 002) will result in severance and it would be impractical to farm the retained areas of land during the Project's construction phase due to their small size, shape and high headland percentage (i.e. the parts of fields where farm machinery turns/changes direction whilst undertaking cultivation, harvesting etc.).		
4.2.135	While shapefiles for the Land Plans have not been made available to T.H. Clements, they estimate that the amount of growing land sterilised will be in the region of 85 acres.		

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		The Applicant has committed to undertaking a joint initial assessment of severed land with TH Clements land agent, based on the maximum design scenario for indicative purposes only with a full assessment to be undertaken when detailed design is available.	
Adverse impacts on farming during, and following operation of the proposed Project			
Insufficient cable burial depth			
4.3.1	The 'standard' depth at which ODOW intends to install the majority of the onshore cable (i.e. 1.2m to the protective tile above the cables, save where trenchless construction techniques are used to 'cross' obstacles such as roads and water courses at a greater depth) is insufficient to enable normal farming practices to safely resume post construction, for the following reasons: i. Location (depth) of field drainage systems – As explained above, the soils along the stretch of the cable route that T.H. Clements farm are deep, predominantly fragile silty, and coarse silt loam soils. Being permeable, these soils are able to absorb and store a significant amount of water, which makes them excellent soils for growing the very best vegetable crops. While these soils are highly permeable, drainage of excess surface water is managed by way of underground field drainage systems comprising networks	The Applicant has responded to concerns around cable depth and field drainage systems within the Applicants Response to Relevant Representations, RR-067.020 [PD1-071] and within the Applicants Responses to The ExA's First Written Questions [REP2-051, Q1 LU 1.17 and 1.18] In addition, the Applicant has confirmed that they will install the cable 300mm below any existing land drainage schemes where practical. This commitment was made in the voluntary agreements with landowners however is now also be	With regard to the Applicant's response relating to the installation of the cable 300mm below any existing land drainage schemes, T.H. Clements' comments are contained in their response to ExA Q2LU 1.9 (ExQ2) [PD-020].

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	of pipes, and associated pumps feeding into ditches/watercourses. ii. Field drainage systems are usually installed in excess of 1.2m deep (depth from ground surface to installed pipes). Appendix 8 provides typical examples, with measurements. Silty soils are also particularly susceptible to structural change, and have a tendency to move/shift, especially during periods of heavy rainfall (hence their often being colloquially being referred to as 'running silts' as noted above). As such, the depth of burial cover of underground features, including potentially underground electricity cables, can change. iii. If the proposed ODOW cable burial depth is only 1.2m from the surface of the land, the cables would very likely cut through, or potentially even pass above, existing underground drainage systems. This would seriously compromise the existing field drainage systems installed at these depths, and likely result in: a. serious technical and health and safety challenges for ODOW to manage. It should be noted that soils examined on 04/06/2024 (within a field in close proximity to the ODOW cable route and at that time being harvested by T.H. Clements) had moisture levels at, and below depths of 0.9m, which were above the typical liquid limit (see Appendix 9). Consequently, the field would have drains (pipes) that are running with water – even at this point in the season. Severing such pipes would	included within section 5.15 of the outline Code of Construction Practice (document reference 8.1, version 3) which has been submitted at Deadline 3.	

		cause local waterlogging when cable trenches were dug. This could render the trench walls unstable, at best, and at worst, liable to cave in. b. the need for completely new drainage schemes to be installed where existing drainage pipes cannot be reinstated to their original state. This could be due to the cables being buried close to drainage depth and the drainage pipes being severed and needing to be replaced. Any diversion of a drainage pipe (upwards, downwards or to the side of its initial location) will result in soil particles (silt especially) being deposited at these deviations. Ultimately, such deposits can only be removed by frequent maintenance, either by jetting the pipes (see Appendix 6) or excavating the ground adjacent to expose, and then clear, the blocked pipes. The upshot of this, is the need to remediate issues directly resulting from the installation of the ODOW cables, in close proximity to them. c. the need to render any remaining, severed pipes incapable of transmitting water. Perforated pipe would need digging out, otherwise water channelled by such upstream pipes (in effect, doing their job) is led to the vicinity of the cable run (where they are severed) – making this area wetter, and more susceptible still to damage by farm, or construction machinery sinking through.		

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	Please see the section following for more information on the risks associated with sinking farm machinery.		
4.3.2	Where existing drains are cut through (severed) in order to install cables, reinstatement must ensure full functioning of the drainage system is restored. If this were not possible, water table depths would be affected, and as a direct result, the soil strength and support capability (for all future field operations) would be compromised. Clearly, where existing drainage systems are cut through (severed) by cables running at similar depth, appropriate restoration to maintain drain grades and drain spacings (which determine water table depth, and effectiveness of the drains themselves) cannot be achieved	The Applicant has updated section 5.15 of the outline Code of Construction Practice (document reference 8.1, version 3) which has been submitted at Deadline 3 to include the process for signing off pre and post construction drainage designs and any requirements for part or full drainage of fields should the existing scheme not be viable.	T.H. Clements' comments on section 5.15 of the outline Code of Construction Practice [REP3-021] are contained in its response to ExA Q2 LU 1.9 (ExQ2) [PD-020], and in appendix 2 to their Deadline 4 submissions..
4.3.3	The following drainage map of Foxholes Field (owned and farmed by T.H. Clements) is provided by way of an example of a single field along the route. It shows the estimated position of the proposed cable route (the limits of the route taken are outlined in red):	The Applicant notes this submission and has obtained land drainage plans from TH Clements to aid pre and post construction drainage designs.	The Applicant and T.H. Clements are currently liaising with regard to potential options for pre and

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	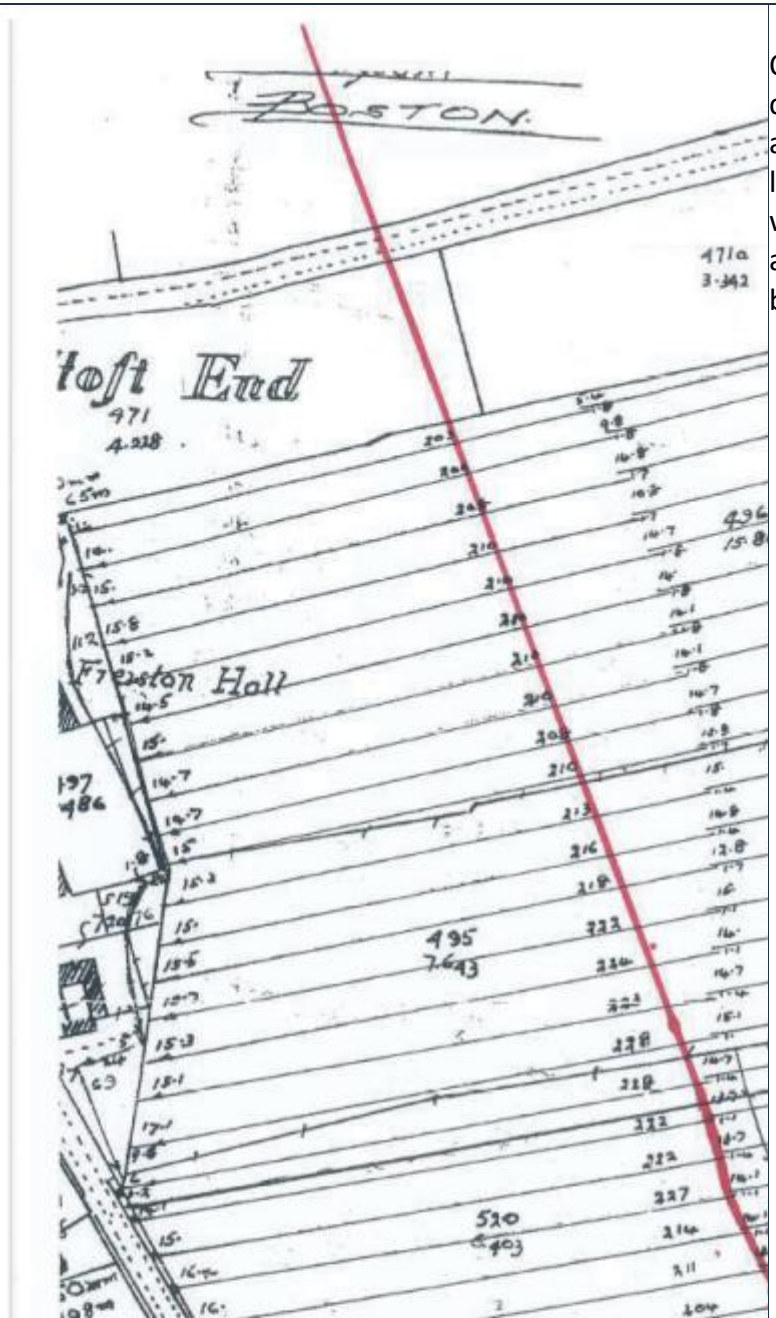	Once the Applicant has pre and post construction drainage designs available for review, the Applicant will liaise with TH Clements in accordance with the oCoCP should they have any additional requirements which are to be considered by the Applicant.	post construction drainage. T.H. Clements' comments on the outline Code of Construction Practice [REP3-021] are contained in its response to ExA Q2 LU 1.9, and in appendix 2 to their Deadline 4 submissions.

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4.3.4	The cable route cuts through almost all Eastwardly running drains (of which there are at least 29) installed in Foxholes Field as shown. Clearly these will all need reinstating (at the project reinstatement phase) with pressure tight, unrestricted, straight joints each side of the cable run to avoid risk of the area above, and around the cable zone becoming wetter through seepage of water from any blocked pipes back into the surrounding soil.		
4.3.5	The drain depth (see Appendix 8) in Foxholes Field runs almost exactly at the proposed ODOW cable depth (allowing for local field variability and the gradient from the outfalls). This will result in severance of these drainage pipe runs, which it will not be possible to restore in direct alignment. Joined pipe runs which are not in direct alignment cannot be jetted effectively (see Appendix 6), increasing the likelihood of blockages occurring along the entirety of the reinstated pipe runs, and compromising the overall effectiveness of the drainage system.		
4.3.6	It is therefore unclear how the current, effective drainage system can be reinstated after the ODOW cables are installed, if the depth of the drains and the proposed cable depth (at 1.2m) are similar. i. Unless the existing drain/pipe paths can be maintained, it will not be possible to jet them out (see Appendix 6) along their full length across the field. ii. Where drains cannot be jetted, the risk of blockage by silt is high. Blockages then lead to water building up, and seepage of water ahead of the blockage back into the surrounding field. Such buildup leads to local waterlogging, and a significantly increased risk of farm		

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	machinery becoming bogged-down in exactly the places where the cables have been installed. iii. Installing an underground main drain (intersecting, and joining the cut drainage pipes) parallel with an underground electricity cable would render the jetting of such joined pipes impossible. This is a totally unacceptable situation as far as agricultural drainage practice is concerned on these high silt content soils. iv. If the proposed cable depth (1.2m) were to be used, installing an entirely new drainage system above the installed cables would be practically unworkable , as a drain pipe depth of less than 1m would be too shallow for effective water table management. Clearly, the safest and most practical option is to bury the cables deeper, below the existing field drains. Using pressure-tight, stepless joints would enable the replacement drainage pipe sections to be installed above the cable, replicating the current pipe directions, and depths, which can then be regularly, and effectively jetted for future maintenance. This would reduce the risk (depending on cable depth) of sinking farm machinery accidentally coming into contact with the cables.		
4.3.7	In open correspondence dated 03/04/2024 (reference OuterDowsing/22000094/LG), ODOW's appointed land agents, Dalcour Maclaren, acknowledged that T.H. Clements would not be able to continue to farm land were the ODOW cables to be buried at insufficient depth. They indicated a commitment to bury the cables at a minimum depth of 300mm below the existing operational field	The Applicant has updated to oCoCP to include the following text to cover instances where existing drainage schemes are impacted by the cable installation cannot be effectively reinstated.	T.H. Clements' comments on alternative drainage schemes are contained in its response to ExA Q2 LU 1.9 (ExQ2) [PD-020].

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	drainage to address that issue: "My client will endeavour, wherever practical, to install the cables at a minimum depth of 300mm below the existing operational drainage". If, for whatever reason, this is impractical for the Contractor, TH Clements would consider that such a situation then also makes it impractical for them to farm this high silt content land for vegetable and root crops, due to the compromised field drainage resulting. Soils with restricted, or compromised drainage are more vulnerable to compaction (soil strength, and the capability to support machinery is directly related to moisture content – wetter soils are mechanically weaker). Increased levels of compaction can occur at any depth where soils are mechanically weaker. Water table depth reduces where drainage is compromised, requiring more time for the soil to dry to sufficient levels to allow effective cultivation can be carried out. In turn, this reduces the windows for cultivation, compromising crop establishment and timeliness. When supply of vegetables is required to rigorous timescales, any compromise which limits the ability to establish a sequence of crops through the year must be avoided. Effective drainage is therefore key.	*'In instances where the existing drainage scheme cannot be adequately reinstated, the Applicant may design an alternative drainage scheme over part or the entirety of a field. Such design to be agreed with the landowner. '*	
Waterlogging of land and 'sinking' of farm machinery			
4.3.8	As noted above, while the soils along the stretch of the cable route that T.H. Clements farm are able to absorb and store a significant amount of water, and a certain amount of excess water can be successfully managed by way of underground field drainage systems, during periods of heavy rainfall (which are increasingly frequent), the fields comprising of silty soils can become waterlogged and surface	The Applicant notes the pictures included within Appendix 10 and understands the requirement to remove water at the earliest opportunity from the field. TTH Clements will have, under a voluntary	T.H. Clements concerns regarding waterlogging of land and sinking of farm machinery remain as per its Relevant Representation [RR-067], Written Representation

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	waterlogging must be promptly addressed by T.H. Clements to ensure the preservation of growing crops.	agreement, the ability to dig deeper than 0.75m having first sought approval from the Applicant to ensure the safety of those working above the cables. Since Issue Specific Hearing 3, the Applicant's and TH Clements' representatives have engaged in review of relevant drafting of restrictive covenant wording to give the consent that is being offered in the voluntary agreements but have not yet reached a conclusion and expect to do so before D4; in the meantime to limit risk of confusion the Applicant has not sought to amend the draft DCO in this respect.	[REP1-050], response to ExA Q1 LU 1.15 [REP2-079] and comments on the Applicant's responses to ExA Q1 LU 1.17 [REP3-065]. T.H. Clements further comment on waterlogging of land and sinking of farm machinery in their response to ExA Q2 LU 1.8 and LU 1.9 [PD-020].
4.3.9	Digging deep channels/trenches (down to 1m or more in depth from the original surface of the land) to allow the standing water to run off into surrounding watercourses/ditches is the accepted method of mitigating the effects of water logging on growing crops. Appendix 10 refers to typical trenches dug for this purpose, and the reasoning behind it.		
4.3.10	It is vital to T.H. Clements' business that trenching and other deep soil interventions are made as soon as waterlogging occurs to avoid damage/deterioration, and ultimately loss of, growing crops.		
4.3.11	Should the ODOW cable be installed at a depth of only 1.2m, the trenching operations could not be safely completed by T.H. Clements, which would result in damage/deterioration, and ultimately loss of, growing crops.		
4.3.12	Furthermore, it is not uncommon for farming machinery to 'sink' into (become bogged down in), and have to be retrieved from, silty soils, particularly during periods of heavy rainfall. In those circumstances, deep, intensive soil movement is required to extract the machinery and repair the damage incurred. The depth of the soil affected is often well in excess of 1m below the surface of the ground when harvesting machinery becomes bogged down, sinking down to the axles. The spraying machinery operated by T.H. Clements also has a high potential to sink through the soil (under wet conditions) to depths (from the ground surface to the wheels) in excess of 1.2m. Loads imposed by sunken spraying machinery can exceed 9 tonnes per axle at depth. Furthermore, these sprayers can have a "high ride"	The Applicants position with regard to sinking machinery remains as set out in RR067.021 [PD-071] and refers to the cultivations that were witnessed onsite. The Applicant notes these comments and the photographic evidence showing farm machinery stuck in the field provided in Appendices 11 and 12. The Applicant considers that these instances are not day to day farming activities and are one off localised	

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	capability to increase their ground clearance (and therefore their potential sinkage depth) up to 2m. High clearance can help passage across potato and Brussel sprout crops (having high crop canopies) usually between August through to January, at which times ground is potentially at, or beyond, its water absorption capacity and therefore most vulnerable to sinkage risk. [Appendix 11 and Appendix 12 give greater detail behind the examples of harvesting and spraying machinery]	incidents that are out of the ordinary. The Applicant notes that the photographs in Appendix 12 are not the county of Lincolnshire. The Applicant notes that the photographs in Appendix 10 are not on land farmed by TH Clements but by another party. The need for a party with such extensive experience of farming in this area to rely on photographs taken elsewhere is consistent with this not being a regular occurrence.	
4.3.13	Consequently, the proposed cable burial depth of 1.2m below ground surface level will be far shallower than the depths of routine farming practices (especially when those practices are undertaken in a wet season, when machinery will be susceptible to sinking) as outlined. This would put the installed cables at high risk of damage and farm machinery operators at high risk of physical harm.		
4.3.14	The potential for movement of silty soils, due to natural erosion and ground shrinkage, and consequent risk of reduced depth of cover over the cables, would exacerbate an already significant health and safety risk to T.H. Clements. Monitoring changes to ground levels would require detailed, and regular surveying of the large areas impacted by the cable. Without this, it would not be possible to know the exact depth of the cables at any point in the future.	The Applicants position remains that on-going monitoring of the cables is not required because the Applicant is not anticipating that the position of the cables will change as set out in The Applicants Response to Relevant Representations PD1-071, RR-012.002.	
4.3.15	In order to retain the ability for T.H. Clements to safely farm these highly productive fields post construction of the proposed Project, the cables would need to be buried at appropriate depths which the appointed cable installation contractor is confident will allow usual farming practices to be safely carried out. This includes making an		

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	allowance for the fact that farming machinery may sink to depths of at least 1.2m, and up to 2m below the surface of the land. In the light of ODOW's proposal to bury cables at a depth of just 1.2m, TH Clements are extremely concerned as to how the Contractor would propose to achieve this. These concerns are further increased in the light of the running soils present along the proposed route, and their instability at such depths also being the case during the construction phase.		
Adverse impact of electromagnetic radiation and heat from the cables on the soil and its microorganisms			
4.3.16	T.H. Clements has invested heavily in soil management, to ensure that the soil it farms is of the highest quality, which includes creating a healthy environment for soil microorganisms. T.H. Clements are particularly concerned about the adverse impact that electromagnetic radiation and heat emanating from buried cables could have on the quality and productivity of the soils on the land it farms.	The Applicant has responded to this concern within The Applicants Response to the ExAs First Written Questions Q1 LU 1.16 (REP2-051).	At Agenda Item 3.8 (Soil Heating) in the Applicant's Written Summary of oral case put at the Issue Specific Hearing 3 held on 5 December 2024 [REP3-051], the Applicant indicates that research has suggested that soil heating from underground cable routes would have no significant impact on T.H. Clements' crops. The Applicant refers to three research papers on soil heating caused by underground cable routes. These three papers are:
4.3.17	There is emerging scientific evidence (Mahadeven A & Young, G: Electromagnetic Radiation from Electronics does affect Plant Growth. JEI v3, #1 (2020)) [REDACTED] that electromagnetic radiation (EMR) can compromise the growth of certain		
4.3.18	Other evidence (Ignatavičienė, I., Vyšniauskienė, R., Rančelienė, V. et al. The effects of electromagnetic radiation of extremely low frequency on growth parameters and nucleotide substitutions in L. minor clones. Acta Physiol Plant 46, 47 (2024). [REDACTED] shows some types of electromagnetic radiation can stimulate growth.		
4.3.19	Review papers have commented "Electromagnetic radiation from various sources, such as power lines, wireless communication devices,		

	and even sunlight, can affect plant growth, development and overall agricultural productivity" (Enhancing sustainable plant production and food security: Understanding the mechanisms and impacts of electromagnetic fields" Ayesha, s et al., Plant Stress 9 (2023) 100198). Such effects could compromise crop consistency (and therefore marketable yield) in the vicinity of the cables.		
4.3.20	Heat emanating from underground cables could also cause some crops (those planted in the vicinity of the cables) to develop more quickly than others. It would not be feasible to harvest crops within the same field at different times, meaning that crops that matured early would have to be discarded upon harvesting as they would be over-ripe and unsaleable. This situation is far more extreme in the case of vegetable crops grown to exacting standards, these needing to be consistently ripe. With combinable crops, once ripe, they can stand in the field awaiting harvesting for a number of days, allowing other areas at different stages of ripening to also become suitably ripe for harvesting.		1. Ahl, C, et al, Underground cable routes: Interim report after three years of experimental field operation Reinshof (2023), Erich Schmidt Verlag GmbH & Co, Berlin; 2. Bruggmann J, et al, Heat dissipation of high voltage cable systems – a technical and agricultural study (2015), 9th International Conference on Insulated Power Cables; and 3. Feldwisch, C, et al, Soil properties and agricultural income on the ALEGrO underground cable route (2024), Erich Schmidt Verlag GmbH & Co, Berlin.

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			It must be noted that only citations for these papers have been provided, not the actual papers themselves. The first paper provided had not been cited correctly by the Applicant, and after some searching the Applicant has confirmed that T.H. Clements' appointed soil experts have found the correct paper, which is: Ahl, C et al. Erdkabeltrassen: Zwischenbilanz nach drei Jahren Versuchsfeldbetrieb Reinshof, *Bodenschutz* (2) (2023) This document had to be requested from the Authors and required translation from German. It should be noted that it is an interim study report over three seasons looking at crop yields of combinable crops (winter wheat and oats). This has no relevance to the harvested vegetable crops grown by TH

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			Clements. In this regard, please see comments below on vegetable crop marketable yield. The second paper (Bruggmann) is a conference proceeding (which is a summary of the presentation made at a conference, rather than the full paper itself), as opposed to a peer reviewed science paper. The introduction (the only page found online to date) describes yield as "harvest gained" (sic). It is not possible to confirm any relevant content in the paper which could apply to T.H. Clements' vegetable crops, and certainly nothing specific regarding marketable yield, or crop ripening implications. It has not been possible to source the third paper (Feldwisch) by a straightforward (University based) scientific paper

			request. T.H. Clements appointed soil experts have contacted the authors to request copies but at the time of writing (31 January) are yet to receive these. Again, the citation provided by the Applicant was not accessible on any databases. The Applicant has confirmed that the study is the following: • Feldwisch N, et al. Bodeneigenschaften und landwirtschaftliche Erträge auf der ALEGrO-Erdkabeltrasse, Bodenschutz (1) (2023) It would be helpful if the Applicant could confirm that this is the correct study from the journal *Bodenschutz* and T.H. Clements has, at the time of writing, asked for that confirmation.

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			This study refers to the Aachen-Liege Grid Overlay. This project has other scientific research reported, including a higher impact peer reviewed paper: ***Emmerling, C., Hoffmann, C., Herzog, M., Schieber, B., Stöckhert, F., Koschel, S., Kurtenacker, M., & Trüby, P. (2024). Soil warming by electrical underground transmission lines impacts temporal dynamics of soil temperature and moisture. Journal of Plant Nutrition and Soil Science, 187, 700–710.*** This paper did confirm a heating effect on crop yield, but concluded that monitoring periods for reporting should be longer to ensure reliable data is produced. The Amprion Website content covering research undertaken on this project (https://www.amprion.net/N

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			etzjournal/Beitr%C3%A4ge-2022/Wie-wirken-Erdkabel-auf-die-Bodeneigenschaften.html) shows combinable (mainly cereals – as opposed to vegetable) crops growing in areas being monitored. These points further reduce the relevance of the third paper. **Footnote on marketable yield**: In the case of vegetable crops grown to exacting standards by T.H. Clements, marketable yield is the amount of harvested crop that can meet these standards. Vegetable crops which mature at different times (due, for example, to growth rate variability) cannot then be harvested at the same time. Vegetable crops that matured early (where cable heating speeds up growth, for example) would have to be discarded upon harvesting the field as a

			whole. Crops close to the cable would, in that situation, be over-ripe and unsaleable. The studies cited tend to focus on what are commercially referred to as 'combinable crops'. i.e. crops that can be harvested by combine harvester, including wheat and oats as per paper 1. These crops, unlike vegetables, can reach maturity at different times and as a whole, achieve marketable yield despite this variability. The early ripening areas can remain standing in the field, usually without compromise to yield, whilst the delayed ripening areas catch up. Then, the field as a whole can be harvested. In these cases, yield is far less likely to be affected, as opposed to marketable yield in the vegetable situation for T.H. Clements.

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			Variability in growth rate and therefore in maturity of vegetable crops are of key concern to T.H. Clements, since vegetable crop harvesting can only be done at the same time in a field (or field zone) pass. For example, returning to the field to harvest later ripening zones resulting from differential growth would add greatly to management time taken, and cost (including for extra transportation of harvesting equipment). This is completely different to a planned harvesting sequence across a vegetable field which is planted to differentially ripen. In this case, the individual harvested zones remain consistent. The cable run could well transverse the field in a different direction to planting, which then makes this situation highly complex and costly to manage. Gaining

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			access to harvest in the cable area within an otherwise unripe crop would cause damage to cropped areas adjacent to the cable in such situations. T.H. Clements would therefore conclude that these papers do not provide any evidence that crop growth rates, and maturity dates for vegetable crops grown are not affected by underground cable heat emissions.
Compensation, Funding and Socio-economic impacts			
5.1	Compensation per se is not for this Examining Authority to consider. However, in order to evaluate whether or not there is a compelling case in the public interest for the compulsory purchase powers and whether or not those powers are proportionate, it is critical to understand whether or not compensation is available to all affected parties. Where there is no entitlement to compensation, in the absence of agreement from the undertaker to pay compensation, interference with an occupier conducting its business on the land is unlikely to be justified and the Order ought not to be made.	The Applicant agrees with the observation that compensation is not a matter for the Examining Authority to consider. However, the Applicant has voluntarily offered to all occupiers of land directly affected by the Project a form of agreement (the Occupier's Consent) which provides for a direct recourse for occupiers such as TH Clements to claim compensation.	T.H. Clements welcome confirmation that the Applicant will compensate occupiers of land for additional costs and losses sustained as a result of the Project, including where the basis of that occupation is informal, as is often the case in this part of the country.
5.2	The way land is now farmed, and has always been, in Lincolnshire is not fully reflected in the Compensation Code. The way in which T.H. Clements holds, occupies and farms land affected by the Project is set		

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

	out above. Much of the land T.H. Clements farms is farmed on an informal basis which is insufficient to found a compensation claim, including a claim for disturbance (which would likely be a significant part of any claim made by T.H. Clements).	The Occupier's Consent commits the Applicant to pay compensation directly to an occupier as if that party were owner or tenant of the land, subject to there being no double counting of recovery by owner, tenant and occupier. The compensation covers crop loss, loss of rent, additional costs of farming land not taken out of production, loss of subsidies, and additional costs incurred by the party in mitigating the impact of the project so as to meet contractual crop supply obligations. Those additional costs include rent, travel costs, cost of improving soil quality and buying in crop to meet commitments. This arguably goes further than the section 22 of the Agriculture (Miscellaneous Provisions) Act 1963, which states that the acquiring authority may pay to a party displaced by works "such reasonable allowance as they think fit towards his removal	Please also see T.H. Clements' comments on socio-economic effects contained in their response to question SE 1.1 of the ExA'S Second Written Questions (ExQ2) [PD-020], and T.H. Clements' comments on the Land Rights Tracker [REP3-034] which are contained at paragraph 5.1 of the cover letter to these Deadline 4 submissions.
5.3	In broad terms, the Compensation Code requires a proprietary interest in order to qualify for compensation, including disturbance. The main categories of persons that this might include are: freeholders, leaseholders, mortgagees, owners of rent charges, beneficiaries under trusts of land and owners of equitable interests (e.g. an option to purchase land). It does not include those without a formal interest in land such as a licensee. Those area which T.H. Clements farms on an informal basis would not qualify.		
5.4	There is a right under section 37 of the Land Compensation Act 1937 for disturbance payments to be made to persons who are disturbed from their lawful possession of land acquired but who do not have a proprietary interest which would otherwise entitle them to compensation (which would cover such informal arrangements). However, section 37 does not assist here, as subsection 37(7) disapplies section 37 in relation to any land which is used for the purposes of agriculture.		
5.5	Section 22 of the Agriculture (Miscellaneous Provisions) Act 1963 ("the 1963 Act") is capable of assisting. It is entitled "Allowances to persons displaced from agricultural land" and provides for payments to persons displaced from agricultural land. It is the broadly equivalent section to section 37 of the 1973 Act but applies to agricultural land. However, there is a fundamental difference: it is a discretionary power to pay compensation to those without a formal		

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	interest in agricultural land, not an obligation. As such, it does not protect T.H. Clements without the express agreement of the ODOW.	expenses and the loss which, in their opinion, he will sustain by reason of the resulting disturbance of his trade or business". In estimating that loss the authority shall have regard to the period for which the land might reasonably have been expected to be available for the purpose of the trade or business, and to the availability of other land suitable for that purpose.	
5.6	Paragraphs 231 and 232 of the Statement of Reasons [AS1-032, p.40] state: *"231. All known occupiers of land affected by the Onshore ECC have been consulted with. Those with an Agricultural Holdings Act (AHA) tenancy or Farm Business Tenancy (FBT) with a period of more than 2 years will be able to sign into the HoTs so long as the landowner has not reserved rights to grant easements. Where there is a more informal arrangement in place, the occupier will be eligible to sign into an Occupiers Consent Form with the Applicant, enabling them to submit a claim to the Applicant for losses as a direct result of the Project.* *232. The Occupiers Consent Form has not yet been issued to any occupiers and is currently under review with the Solicitors Action Group ("SAG"). The SAG is a working group of solicitors similar to that of the LIG, representing the majority of landowners and occupiers affected by the Project."*	However, the Occupier's Consent does conform to general guidance that the affected party should be put in an equivalent position as if the works had not been undertaken.	
5.7	The Occupiers Consent Form has been issued. T.H. Clements is due to sit down with ODOW in November and welcomes the opportunity to negotiate. The Occupiers Consent Form is a deed under which the occupier of land consents to grant of an option agreement and deed of grant by the underlying landowner (which grant ODOW the necessary rights to build out the Project) in return for certain compensation. T.H. Clements acknowledges that this could be the basis for future agreement but it does not address some fundamental issues which will likely propagate loss such as cable depth and	The Applicant has met with representatives of TH Clements, including professional advisers, and has welcomed the opportunity to do so. Discussions in November 2024 proved to be very constructive. The Applicant will attend further meetings early in 2025 in anticipation of finalising heads of terms for a	

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

	drainage – outlined above – and nor does it explicitly compensate for crop damage outside of the land covered by the option agreements which may be necessary where crop loss is caused by fugitive dust. T.H. Clements looks forward to sitting down with the ODOW on these points. However, as things stand, without an agreement with ODOW, T.H. Clements does not have a right to be compensated across a significant proportion of the area it farms and which would be affected by the Project.	voluntary agreement and hopes to have an agreement in place shortly thereafter.	
5.8	The Examining Authority is, therefore, currently being asked by ODOW to recommend approval of compulsory purchase powers without any guarantee of compensation.		
5.9	Expropriation without compensation and for the commercial benefit of a private business is plainly inappropriate and disproportionate. It is only compensation that can make powers of expropriation in the public interest proportionate so as to warrant their use and the interference with human rights.		
5.10	Paragraph 17 of the CA Guidance, states that any application for a development consent order authorising compulsory acquisition must be accompanied by a statement explaining how it will be funded. Such statement should provide as much information as possible about the resource implications of both acquiring the land and implementing the project for which the land is required. If a project is not intended to be independently financially viable, or financing details cannot be finalised until there is certainty about the assembly of the necessary land, the applicant (in this case ODOW) should provide an indication of how any potential shortfalls are intended to be met, including the degree to which other bodies (public or private sector) have agreed	The Applicant has assessed the value for compensation within their Property Cost Estimate (APP-030) which forms part of the Funding Statement (REP2-019). The Funding Statement confirms that adequate funding is in place to cover such costs identified within the Property Cost Estimate. The Applicant also refers to funding within The Applicant's Responses to The ExA's First Written	

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

	to make financial contributions or to underwrite the scheme, and on what basis such contributions or underwriting is to be made.	Questions (ExQ1) (REP2-051, CA 1.17)	
5.11	As explained above, the construction of the Project would result in the loss of a vast amount of highly productive farming land, including a significant amount of the land currently being farmed by T.H. Clements.	The Applicant has responded to this concern within The Applicants Response to Relevant Representations PD1-071, RR-067.023.	
5.12	The loss of that land would have such a detrimental impact on T.H. Clements farming operations including production capacity and service level requirements for retailers, that it would be near impossible for T.H. Clements to fulfil its supply contracts with its customers (retailers). The loss of supply contracts with key retailers, including Tesco Plc, (which, if lost, would be very difficult to regain in the foreseeable future) could be so significant that the business could be extinguished as a result.		
5.13	T.H. Clements current annual turnover is £80 million and it is anticipated that this will increase to circa £100 million within the next three years. Notably, the proposed Project's Property Cost Estimate (ODOW Application Document Reference 4.2.4) is only just over £51 million.		
5.14	If compensation is agreed in principle (as it must to justify the compulsory purchase powers and interference with property rights protected by the Human Rights Act), compensation for the extinguishment of a circa £100m/year for a single business (there are many farming businesses affected by the Project), would be significant in itself and of such order of magnitude that it could comfortably exceed the Project's Property Cost Estimate on its own.		

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

5.15	While Article 44 of the Order, as currently drafted, would require ODOW to put in place a guarantee or other form of security in respect of its liability to pay compensation under the Order, before exercising any compulsory acquisition or temporary possession powers, ODOW would at present appear to fail to meet one of the key considerations which must be demonstrated to the satisfaction of the Secretary of State in order to meet the overriding test for making of the Order including compulsory acquisition powers in the first place (i.e. that there is a compelling case in the public interest to justify interference with the private rights of those who have interests in the land included in the Order).	The Applicant considers there is a compelling case in the public interest to justify interference with the private rights of those who have interests in the land included in the Order. The Applicant's reasoning for this is set out in the Statement of Reasons (document 4.3, version 6), In addition, the Applicant provided further commentary on its reasons for reaching that conclusion in its responses to questions CA 1.20. CA CA 1.22 and 1.29 of The Applicant's Responses to The ExA's First Written Questions (ExQ1) (REP2-051).	
5.16	If compensation is not agreed in principle, not only does it raise a fundamental issue with the justification of the compulsory purchase powers, it threatens the ongoing viability of a significant business the potential loss of which is a material detrimental socio-economic impact of the Project which weighs materially against the grant of consent.	As noted above, the Applicant has voluntarily offered to all occupiers of land directly affected by the Project a form of agreement (the Occupier's Consent) which provides for a direct recourse for occupiers such as TH Clements to claim compensation.	See response to 5.1.
Conclusion			
6.1	T.H. Clements will continue to engage constructively with ODOW in an effort to resolve the above outlined issues of concern during Examination. However, given that the proposed Project has the potential to devastate T.H. Clements' business, pending satisfactory	The Applicant welcomes TH Clements' confirmation that it will continue to engage with the Applicant. The Applicant is equally committed to	

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

	resolution of its concerns, T.H. Clements must strongly object to the Order and reserves its right to make further representations during the course of the Examination should that be necessary.	continued engagement with a view to resolving outstanding matters of disagreement between the parties.	
6.2	As T.H. Clements indicated at the preliminary meeting, the issues raised in this WR in relation to impacts on agricultural practice are important and wide spread. The same or similar issues have been raised by landowners up and down the proposed onshore cable route corridor and have been raised in the following relevant representations: ▪ 6.2.1 RR-012: Brown & Co ▪ 6.2.2 RR-023: Fred Grant Co ▪ 6.2.3 RR-024: Brown & Co Property and Business Consultants LLP on behalf of ▪ George Hay & Sons Limited ▪ 6.2.4 RR-026: Brown & Co Property and Business Consultants LLP on behalf of ▪ G-VEG Limited ▪ 6.2.5 RR-029: Hub Rural Ltd on behalf of The Holmes 1987 Pension Fund ▪ 6.2.6 RR-030: Hub Rural Ltd on behalf of Henry Tunnard Ltd ▪ 6.2.7 RR-032: Hub Rural Ltd on behalf of Jonathan Gordon Fowler (and J Fowler ▪ & Sons) ▪ 6.2.8 RR-033: Brown & Co Property and Business Consultants LLP on behalf of ▪ J W Grant & Co ▪ 6.2.9 RR-034: Brown & Co Property and Business Consultants LLP on behalf of ▪ J W Grant & Co Pension Fund	The Applicant has responded to all relevant representations made in The Applicant's Responses to Relevant Representations (PD1-071). It should be noted that out of the 35 representations made, 26 were made by Affected Persons and Category 1 interests with whom the Applicant is seeking Option Agreements and 22 of them have signed HoTs (84.6%). 3 representations were made by third parties with tenancies of less than 2 years or annual rolling licences and these parties are being offered an Occupier's Consent (terms as noted above). 6 representations were made by agents or groups, these are likely to be duplicates of those representations made by their clients.	

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

	▪ 6.2.10 RR-035: The Lincolnshire Association of Agricultural Valuers Land Interest ▪ Group ▪ 6.2.11 RR-040: Hub Rural Ltd on behalf of Janice Norma Pettitt, Richard Nelson ▪ Pettitt, F Pettitt & Son ▪ 6.2.12 RR-043: Brown & Co Property and Business Consultants LLP on behalf of ▪ M Baker (Produce) Ltd Pension Scheme ▪ 6.2.13 RR-058: Savills (UK) Limited ▪ 6.2.14 RR-062: Brown & Co Property and Business Consultants LLP on behalf of ▪ Stanley David Codd Will Trust ▪ 6.2.15 RR-063: Brown & Co Property and Business Consultants LLP on behalf of ▪ Staples Brothers Limited ▪ 750492886_1 65 ▪ 6.2.16 RR-064: Brown & Co Property and Business Consultants LLP on behalf of Staples (Vegetables) ▪ Ltd ▪ 6.2.17 RR-069: Brown & Co Property and Business Consultants LLP (Brown & Co Property and Business Consultants LLP) on behalf of VER Limited ▪ 6.2.18 RR-073: Will Barker & Co (Will Barker & Co) on behalf of Will Barker & Co ▪ 6.2.19 RR-075: Savills (UK) Limited on behalf of Woodlands Farm (Kirton) Limited and Andrew Peter Dennis ▪ 6.2.20 RR-076: Hub Rural Limited on behalf of W T Taylor & Sons ▪ 6.2.21 RR-077: William Barker		

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

	▪ 6.2.22 RR-078: Brown & Co Property and Business Consultants LLP (Brown & Co Property and Business Consultants LLP) on behalf of Doreen Belton ▪ 6.2.23 RR-079: Brown & Co Property and Business Consultants LLP on behalf of Steve Belton ▪ 6.2.24 RR-081: Brown & Co Property and Business Consultants LLP on behalf of ▪ Messrs A, J & R Daubney ▪ 6.2.25 RR-082: Hub Rural Ltd on behalf of Gerald Hicks ▪ 6.2.26 RR-083: Hub Rural Ltd (Hub Rural Ltd) on behalf of Paul Cameron Holmes ▪ 6.2.27 RR-087: Fraser Dawbarns LLP on behalf of Alan Harold Naylor ▪ 6.2.28 RR-088: Fraser Dawbarns LLP on behalf of Ann Naylor ▪ 6.2.29 RR-089: Fraser Dawbarns LLP on behalf of Brian Douglas Naylor ▪ 6.2.30 RR-090: Fraser Dawbarns LLP (Fraser Dawbarns LLP) on behalf of Simon ▪ Brian Naylor ▪ 6.2.31 RR-094: Brown & Co Property and Business Consultants LLP on behalf of Roseanna Skelham, Elizabeth Schweikhardt & Victoria Jane White ▪ 6.2.32 RR-095: Hub Rural Ltd on behalf of Mark Skipworth and Betty Skipworth		
6.3	Give their substantive nature and widespread effect, T.H. Clements hopes the Examining Authority will consider these issues at an issue specific hearing.		

Comments on The Applicant's Comments on Deadline 1 Written Representations [REP3-038]

Please Note: Except at sections 3.2.1, 4.3.3, 4.3.16 and 5.1 where more substantive comments are provided, T.H. Clements' comments on the Applicant's comments to T.H. Clements' written representations refer the Examining Authority to T.H. Clements' relevant Deadline 4 submissions.

Appendix 5 - Table of Order Land Plots

Relevance to T.H. Clements	Plot Numbers
Order Land Plots owned by T.H. Clements	29-009, 29-010, 29-011, 29-012, 29-013, 30-001, 30-002, 30-003, 30-004, 30-006, 30-009, 30-010 and 30-011.
Order Land Plots owned by a Director of T.H. Clements, over which T.H. Clements Limited have a Farm Business Tenancy	Christopher Clements: 26-013, 26-015, 26-016, 26-017, 30-005, 30-007 and 30-008
	Barbara Clements: 32-009, 32-010, 32-011, 32-012, 32-013, 32-014 and 32-015
Order Land Plots occupied and farmed by T.H. Clements on an annual rolling basis	30-012, 30-013, 30-014, 30-015, 30-016, 32-003, 32-004, 32-004a, 32-008, 32-009, 32-010, 32-011, 32-020, 32-021, 32-022, 32-023, 32-024, 32-025, 32-026, 33-001, 34-017, 34-018, 34-022, 34-024, 37-002, 37-003, 37-005 and 37-006
Order Land Plots farmed by T.H. Clements on a rotational basis	J Woods: 33-017, 33-018, 33-021, 33-022, 33-023, 33-024, 33-025, 33-026, 33-027, 33-028, 33-029, 33-030 and 33-031
	M Skipworth: 33-033, 33-034, 33-035, 33-036 and 33-037
	B Bush: 34-019, 34-022, 34-023, 34-024, 37-003, 37-005 and 37-006
	J Fowler: 37-012, 38-007, 38-008, 38-009, 39-001 and 39-002
	Robert Oldershaw: 41-003
	J Ulyatt: 43-005
Order Land Plots farmed by T.H. Clements on a contractual basis	27-002, 27-003, 27-004, 27-005, 27-006, 27-007, 27-008, 27-009, 27-011, 27-013, 27-014, 27-015, 27-016, 27-017, 27-018, 27-019, 27-020, 27-021, 27-022, 27-023, 27-025, 27-026, 27-027, 27-028, 27-029, 27-030 and 28-001
Presumed ownership of subsoil of part width of highway or drain	T.H. Clements: 30-004, 30-006
	Christopher Clements: 30-008
	Barbara Clements: 32-009, 32-010

Appendix 6 - Comments on The Applicant's comments on ExQ1 Responses

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
GC General and Cross-topic Questions				
Design, parameters and other details of the Proposed Development			**Applicant's comments on T.H. Clements response**	**T.H. Clements comments**
Q1 GC 1.1	The Applicant	**Duration of onshore construction operations** In paragraph 189 of the Environmental Statement (ES) Chapter 3 [APP-058] the Applicant states that installing the onshore cable ducts and export cables is anticipated to take up to 42 months. How has this proposed construction period been arrived at and how does it compare with that of other recently-consented offshore wind farm projects such as Hornsea Four and the Sheringham Shoal and Dudgeon Extension Projects? What certainty can Interested Parties (IPs) have that any completed sections of the onshore Export Cable Corridor will be reinstated at the earliest available opportunity?	The Applicant has responded to this question and has nothing further to add at this stage. As set out in ISH 3, the Applicant has committed to discussions with TH Clements ahead of Deadline 4 and will provide an update as to the status of discussions.	T.H. Clements await information regarding the proposed construction programme and pending that information reiterates its position as set out at Deadline 2 [REP2-079].

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
CC Climate Change				
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1CC 1.4	The Applicant	**Post decommissioning Onshore and Offshore Cables** Paragraph 24.7.2.1 of Chapter 24 [APP-079], 31.6.6 of Chapter 31 [APP-086] and 7.12.3 of Chapter 7 [APP-062] indicate that the buried onshore and offshore cables would be left in place during decommissioning. Please explain the management strategies for these cables if they become exposed post-decommissioning due to factors such as coastal erosion. Specifically, address how potential hazards to people or the environment, as well as any unacceptable visual impacts, would be mitigated and set out how this mitigation would be secured, or provide signposting to where this	The Applicant has addressed these points in the following submissions: • 20.3 The Applicant's Reponses to Written Representations submitted at deadline 3 • 19.2 The Applicant's Responses to The ExA's First Written Questions (ExQ1) (REP2-051) – Q1 LU 1.17, Q1 LU 1.18 • Procedural Deadline - 15.3 The Applicant's Responses to Relevant Representations (PD1-071) – RR067.020, RR067.021 As set out in ISH 3, the Applicant has committed to discussions with TH Clements ahead of Deadline 4 and will provide an update as to the status of discussions.	T.H. Clements position remains as set out in its Deadline 2 response [REP2-079]. Discussions are ongoing regarding the feasibility of monitoring the depth and horizonal position of the cable.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		mitigation is secured within the application.		
CA Compulsory Acquisition, Temporary Possession and Other Land or Rights Considerations				
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 CA 1.5	The Applicant	**The scope and purpose of the Compulsory Acquisition Powers sought** Appendix 2 of the SoR [AS1-032] provides a description of the land which is subject to the acquisition of rights or the imposition of restrictive covenants: • Please provide an indication of the anticipated content and/or an initial draft of any restrictive	The Applicant has addressed these points in the following submissions: 19.2 The Applicant's Responses to The ExA's First Written Questions (ExQ1) (REP2-051) Q1 CA 1.5 As set out in ISH 3, the Applicant has committed to discussions with TH Clements ahead of Deadline 4 and will provide an update as to the status of discussions.	M&R has been in discussions with the Applicant regarding the drafting of the restrictive covenant but agreement has not been reached. T.H. Clements position remains as set out in its Deadline 3 responses [REP3-059] and [REP3-063].]

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		covenants intended to be imposed. • Should a requirement for consultation with relevant owners/occupiers regarding the drafting of any such restrictive covenants be imposed?		
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 CA 1.9	The Applicant	**The scope and purpose of other rights and powers** The SoR [AS1-032] paragraph 5.5.5, explains that in addition to powers of CA, if made, the DCO would also confer other rights and powers on the Applicant that may interfere with property rights and private interests. Article 18 of the dDCO [AS1-024]	The Applicant has addressed these points in the following submissions: 20.3 The Applicant's Reponses to Written Representations submitted at deadline 3	Please see T.H. Clement's response to ExA Q2 LU1.4 and SE1.1 and comments on the Applicant's updated Land Rights Tracker [REP3-034], set out in T.H. Clements' covering letter submitted at Deadline 4.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		would authorise the Applicant to enter onto any land within the Order Limits or which may be affected by the authorised development to undertake various survey and investigative works, including trial holes. Article 18(2) provides for a 14 day notice period to be given to the owner/occupier of the land. • What assessment, if any, has been made of the effect upon individual Affected Persons and their private loss that would result from the exercise of CA powers in each case. • If no such assessment has been undertaken, please explain why it is considered unnecessary to do so in this case? • What is the clear evidence that the public benefit would outweigh the private loss and how has that balancing exercise between public benefit and private loss been carried out?	19.2 The Applicant's Responses to The ExA's First Written Questions (ExQ1) (REP2-051) Q1 CA 1.12 The Applicant previously responded to queries regarding compensation matters during the Compulsory Acquisition Hearing ("CAH1"). The summary of the response is provided at Deadline 3 in document 20.4.1 The Applicant's Written Summary of oral case put at the Compulsory Acquisition Hearing, 3rd Dec . As set out in ISH 3 (see Document 20.4.4), the Applicant has committed to discussions with TH Clements ahead of Deadline 4 and will provide an update as to the status of discussions.	
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
Q1 CA 1.10	The Applicant	**Compulsory Acquisition of the land, rights and powers that are sought by the dDCO** The SoR [AS1-032], section 3, sets out the Applicant's case in the public interest for the proposed CA. Section 3.4 concludes that there is a need for and benefit as a result of the Proposed Development. While this conclusion sets out the benefits delivered by the Proposed Development and its objectives, there is little mention of any consideration given to private loss. Please provide further explanation in relation to the following: • What assessment, if any, has been made of the effect upon individual Affected Persons and their private loss that would result from the exercise of CA powers in each case. • If no such assessment has been undertaken, please explain why it is considered unnecessary to do so in this case? • What is the clear evidence that the public benefit would outweigh the private loss and how has that balancing	Please see response to Q1 CA 1.09 above.	Please see response to Q1 CA 1.09 above.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		exercise between public benefit and private loss been carried out?		
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 CA 1.14	The Applicant TH Clements & Son Ltd National Grid Electricity Transmission PLC St John's College Cambridge Julie Ann Mason	**Whether all reasonable alternatives to Compulsory Acquisition have been explored** The Planning Act 2008 guidance related to procedures for the compulsory acquisition of land (CA Guidance), paragraph 25, states that applicants should seek to acquire land by negotiation wherever practicable. As a general rule, authority to acquire land compulsorily should only be sought as part of an order granting development consent if attempts to acquire by agreement fail. • Has the Applicant complied with this aspect of the CA Guidance? If not, then set out your reasoning. • Has the Applicant offered full access to alternative dispute resolution techniques for those with concerns about the CA of their land or considered other	The Applicant has consulted and negotiated with TH Clements extensively and will continue to do so with the aim of reaching a resolution by D4. The Applicant refutes the claim that the consultation and negotiation is not a genuine attempt to avoid compulsory acquisition simply because it disagrees compensation should be payable now in advance of the Order being granted. The Applicant made their position clear in CAH1 (See 20.4.1- The Applicant's Written Summary of Oral Case Put at the Compulsory Acquisition Hearing 1, submitted at Deadline 3), noting that this position is inline with statute (s52 of the Land Compensation Act 1972) and CA Guidance.	Please see response to Q1 CA 1.09 above. T.H. Clements remain concerned about what the Applicant will commit to and when in terms of providing compensation.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		means of involving those affected? Any other Affected Parties not directly addressed by this question should feel free (but are not obliged) to contribute a response to this question.	The Applicant and TH Clements are still in active negotiations so ADR has not been offered. As set out in ISH3, the Applicant has committed to discussions with TH Clements ahead of Deadline 4 and will provide an update as to the status of discussions.	
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 CA 1.18	The Applicant	**Whether adequate funding is likely to be available** The Funding Statement [REP1-012], indicates that the scheme has a most-likely estimate of between £5.5 and £7.5 billion to cover all costs of construction, operation, development, project management, financing and land acquisition. This estimate includes an allowance for compensation payments relating to the CA of land interests in, and rights over, land and the TP and use of land. It also takes into account potential claims under Part 1 of the Land Compensation Act 1973, Section 10 of the Compulsory Purchase Act 1965 and Section 152(3) of the Planning Act 2008.	Please see The Applicant's response to Q1 CA 1.9 above.	Please see response to Q1 CA 1.09 above.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		• How can the ExA be satisfied as to the reliability of that estimated figure, and what is its degree of accuracy? • How does the Applicant account for the £2 billion range between the lower and upper cost estimates? • Whilst the Funding Statement indicates that the costs of meeting any valid blight claim will be met by the Applicant, please confirm that the resource implications of a possible acquisition resulting from a blight notice have been adequately taken account of in the overall cost estimate. • The ownership structure declared for TotalEnergies Holdings Europe in the Funding Statement is indicated as comprising of three separate 'parent' entities. However, the share of ownership indicated as being held by each of these entities does not account for 100% of the ownership of TotalEnergies Holdings Europe. Why is the full ownership of this company not		

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ExQ1	Question to:	Question:		
		shown in the Funding Statement and how does this apparent shortfall affect the funding available for the Proposed Development?		
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 CA 1.20	The Applicant	**Whether the purposes of the proposed Compulsory Acquisition justify interfering with the human rights of those with an interest in the land affected** What degree of importance has been attributed to the existing uses of the land proposed to be acquired in assessing whether any interference would be justified, and why?	The Applicant has assessed potential impacts on food security and BMV land within Chapter 29 Socioeconomic Characteristics [APP-084]. The assessment has concluded that the effect during both the development and operational phase is negligible. The Applicant outlines their response to compensation in Q1 CA 1.9 above.	Please see T.H. Clements Deadline 2 response to this question [REP2-079] and its response to ExA Q2 SE 1.1.
LU Land Use, Geology and Ground Conditions				
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 LU 1.5	The Applicant	**Severance of agricultural land during construction** Severance has been identified as a concern by TH Clements & Sons Ltd and Woodlands Farm (Kirton) Ltd	The Applicant has addressed these points in the following submissions:	Please see T.H. Clements response to ExA Q2 LU 1.2 regarding severance.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		[RR-067, RR-075 and REP1-050]. The Applicant's response [PD1-071] to TH Clements & Son Ltd states that its land agents have reviewed areas of land which may be severed as a result of construction activities. The response to Woodland Farm (Kirton) Ltd appears to suggest that Horizontal Directional Drilling (HDD) is proposed, in part, to address severance. The ExA notes that paragraph 277 of Chapter 25 of the Environmental Statement (ES) [AS1-050] states that severance impacts on operations can still be assessed and mitigated without full details of occupying tenants. The outline Code of Construction Practice (OCoCP) [PD1-038] refers to the preparation of a management plan for severed land to be agreed with land-owners and tenants but it is not identified in the Schedule of Mitigation [PD1-058] or Requirement (R)18 of the draft Development Consent Order (dDCO) [AS1-024]. • Can the Applicant confirm if it has sought to engage with all relevant landowners and tenants to determine the amount of land that would be severed? If so, please provide	• 20.3 The Applicant's Reponses to Written Representations submitted at deadline 3 • 19.2 The Applicant's Responses to The ExA's First Written Questions (ExQ1) (REP2-051) Q1 LU 1.5 As set out at ISH 3, the Applicant has committed to discussions with TH Clements ahead of Deadline 4 and will provide an update as to the status of discussions.	

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		details of the amount of land and implications for the conclusions in the ES. • Please elaborate on the proposal for a management plan for severed land. Will this be a single plan or separate plans for individual owners or tenants? How is the commitment for these plans secured? Should it be specifically identified in the Schedule of Mitigation and dDCO?		
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 LU 1.11	The Applicant Interested Parties	**Stone contamination** The ExA notes the concerns raised by multiple Interested Parties regarding the potential for stone contamination of Grade 1 soils and associated implications for agriculture. The Applicant responds [PD1-071] by referring to a commitment in the outline SMP to conduct post-construction soil surveys. If stones are present on land previously stone free, *"an aftercare programme (as outlined in section 5.11 of the oSMP) will be agreed upon, and remediation works will be*	The Applicant has amended the oSMP to reflect the % of stone content by volume will be recorded as part of the ALC surveys as a specific % and not simply <5%. The post condition soil. The post [construction] soil surveys will then use the same metric so a direct comparison can be made when comparing to a baseline survey and the land returned to its post works condition.	Please see T.H. Clements comments on the oSMP submitted at Deadline 4.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		undertaken.". However, the outline SMP [PD1-040] does not appear to include a commitment to ensure that stone free land remains so after construction. • Should the outline SMP include a specific commitment to ensure that land identified as stone free in pre-construction surveys is returned this condition post-construction? • Can the Applicant elaborate on the reasons why it cannot commit to aluminium trackway being the primary method for haul roads? • The Written Representation from TH Clements & Son Ltd [REP1-050] identifies issues apparent following the completion of other projects in the area, including Triton Knoll and Viking Link. Can the Applicant comment on the effectiveness of mitigation to avoid residual stone contamination on these projects and whether any lessons can be learned from them?		

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 LU 1.12	The Applicant	**Soil restoration** NE [RR-045] welcomes the commitment to produce a Decommissioning Plan in R24 of the dDCO [AS1-024] but request a commitment to restore land to its original condition and ALC grade. The Applicant's response [PD1-071] appears to be contradictory in stating that the Decommissioning Plan will *"confirm the detail of restoration required which will include the restoration of land to its original ALC Grade*" whilst going on to state that this would not be possible as it would *"…require the methodology for ALC assessment to remain the same (currently MAFF 1988 guidance), with no updates to climate data sets.".* The ExA notes that there does not appear to be any confirmation in R24 of the dDCO, the outline SMP [PD1-040] or the Schedule of Mitigation [PD1-058] that the Decommissioning Plan will provide any detail regarding soil restoration. • Should the outline SMP provide a specific commitment to restore agricultural land, to	The Applicant notes T.H. Clements comments. Soil Restoration was a topic of discussion at ISH 3 Onshore Matters, where The Applicant provided further updates on this matter prior to Deadline 3. The Applicant's Written Summary of oral case put at Issue Specific Hearing 3 on Onshore matters, 5th Dec has been submitted at Deadline 3 (document reference 20.4.4). The Applicant has amended the oSMP and submitted at D3 to include provision for testing over and above the ALC surveys. The Applicant has also updated the oSMP to include the three soil horizons namely topsoil, upper subsoil and lower subsoil and measures to prevent mixing of different soil types and management of storage bunds. As confirmed in ISH3, TH Clements are to provide their comments on the oSMP and oCoCP at D3. The Applicant has committed to reviewing these comments and incorporating any changes required at D4.	Please see T.H. Clements response to ExA Q2 1.7 and comments on the oSMP submitted at Deadline 4.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		the same ALC grade (or equivalent future grade) to that identified in pre-construction surveys? If not, why not? • Confirm if any such commitment would apply to the 26.38ha "permanent" land take, including the OnSS, as identified in Chapter 25 of the ES following decommissioning as well as the onshore ECC and 400kV cable corridor during operation? • Should R24, outline SMP and the Schedule of Mitigation confirm the commitment for the Decommissioning Plan to restore soil?		
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 LU 1.13	The Applicant	**Soil aftercare and monitoring** Section 5.11 of the outline SMP [PD1-040] states that *"It will be responsibility of the Soil Clerk of Works (SCoW) (or similar appointed person) to determine when the reinstatement standard has been met."* Table 2 provides outline details	The Applicant has updated the oSMP to include the three soil horizons namely topsoil, upper subsoil and lower subsoil and measures to prevent mixing of different soil types and management of storage bunds.	Please see T.H. Clements comments on the oSMP submitted at Deadline 4.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		of proposed monitoring but the frequency is not given. • Will stakeholders, including landowners, be consulted to confirm that the reinstatement standard has been met? If so, how is this secured? If not, why not? • Please provide further details of the frequency of proposed monitoring.	As confirmed in ISH3 (see Document Reference 20.4.4), TH Clements are to provide their comments on the OSMP and oCoCP at D3. The Applicant has committed to reviewing these	
Q1 LU 1.14	The Applicant NE	**Soil handling** • Should the outline SMP [PD1-040] include explicit reference to the need to follow the Institute of Quarrying's Good Practice for Handling Soils in Mineral Working in relation to soil handling? If not, why not? • What are Natural England's comments on the Applicant's suggestion in its response to its Relevant Representation [PD1-071] that the winter working agreement (as per table 22.7 of Chapter 22 Onshore Ornithology [APP-077] would be beneficial to soil handling? Should this be identified in the outline SMP?	Soil handling was a topic of discussion at ISH 3 Onshore Matters, where The Applicant provided further updates on this matter prior to Deadline 3. The Applicant's Written Summary of oral case put at Issue Specific Hearing 3 on Onshore matters, 5th Dec has been submitted at Deadline 3 (document reference 20.4.4). As confirmed at ISH3, TH Clements are to provide their comments on the OSMP and oCoCP at D3. The Applicant has committed to reviewing these comments and incorporating any changes required at D4.	Please see T.H. Clements comments on the oSMP submitted at Deadline 4.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 LU 1.15	The Applicant LCC East Lindsey District Council Boston Borough Council South Holland District Council	**Level of detail in the outline SMP** Interested Parties including NE and agricultural businesses have expressed concern regarding the level of detail provided in the outline SMP. The ExA notes that LCC's LIR [REP1-053] considers the outline SMP to be acceptable but goes on to state that in populating the document, it will be necessary to identify the individual areas of land and the route for soil stripping, trenching, restoration as well as addressing soil challenges such as running sands and drainage in detail. • Does the outline SMP provide sufficient detail at this stage? If not, please elaborate on specific additions that are necessary.	The Applicant would like to clarify that the Management Plan will be drafted post in line with the Outline Plan, additional levels of detail and information. A fully comprehensive Plan at this stage of consent is not appropriate as engineering design must be concluded to detailed plan to be finalised. The Applicant has at Deadline 3 updated oSMP in section 2.4 and section 5.10 to include specific reference to stone contamination to address the points raised in this Written Representation by TH Clements. The Applicant notes the information provided by TH Clements and has updated the oSMP (document reference 8.1.3, version 3) to include reference to the three soil horizons namely top soil , upper subsoil and lower subsoil at Deadline 3 and how these will be effectively managed during construction.	Please see T.H. Clements comments on the oSMP submitted at Deadline 4.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
			As confirmed in ISH3, TH Clements are to provide their comments on the OSMP and oCoCP at D3. The Applicant has committed to reviewing these comments and incorporating any changes required at D4.	
			Applicant's comments on T.H. Clements response	**T.H. Clements comments**
Q1 LU 1.17	The Applicant LCC East Lindsey District Council Boston Borough Council South Holland District Council	**Cable burial depth and potential implications** Table 8.5 of the Project Description [APP-058] states that the minimum trench depth to cable protection tile is 1.2m. However, the ExA notes that the Applicant refers to a minimum burial depth of 1.25m in its response to Relevant Representations [PD1-071]. *"Recently completed extensive ground investigations"* of the onshore ECC and 400kV cable corridor, including Fenland silts are also referenced by the Applicant. Nevertheless, the ExA notes that the results are intended to inform the detailed design stage. • What is the proposed minimum burial depth of the	The Applicant notes LCC's response and notes that it aligns with the Applicants position regarding the statement that farm machinery does not operate at a depth of 1.2m. The Applicant has responded to drainage queries in 19.2 The Applicant's Responses to The ExA's First Written Questions (ExQ1) (REP2-051) Q1 LU1.18. In addition, the Applicant has confirmed that they will install the cable 300mm below any existing land drainage schemes where practical. This commitment was made in the voluntary agreements with landowners however is now also be included within section 5.15 of the outline Code of Construction Practice (document reference	Please see T.H. Clements response to ExA Q2 1.8 and comments on the oSMP and oCoCP submitted at Deadline 4.

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

ExQ1	Question to:	Question:		
		onshore ECC and 400kV Cable? • Can the details of the ground investigations be provided now? Do the results have any implications for cable depth? The Written Representation from TH Clement & Sons Ltd [REP1-050] provides further details and photographic evidence of potential issues that may arise from the proposed cable depth, including for drainage and the risk of farm machinery coming into contact with cabling after getting bogged down. Similar concerns are echoed in multiple other Relevant Representations, including, Brown & Co [RR-012], Hub Rural Ltd on behalf of The Holmes 1987 Pension Fund [RR-029], The Lincolnshire Association of Agricultural Valuers Land Interest Group [RR-035] and William Barker [RR-077] • Can the Applicant comment on the additional evidence provided and identify any implications for its current approach? Should long term monitoring be undertaken as a precaution?	8.1, version 3) which has been submitted at Deadline 3. The Applicant has responded to this question and has nothing further to add at this stage.	

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

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ExQ1	Question to:	Question:		
		• Are LCC and the LPAs aware of any examples in the area where cable depth has presented similar issues raised by Interested Parties? • Do Interested Parties have any evidence of cabling rising and moving from its intended position due to the nature of local soils.		

Abbreviations Used	
AQMP	Air Quality Management Plan
AMS	Arboricultural Management Strategy
AMSL	Above Mean Sea Level
ANS	Artificial Nesting Structure
Art	Article
ALC	Agricultural Land Classification
BNG	Biodiversity Net Gain
BoR	Book of Reference
BMV	Best and Most Versatile

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

CA	Compulsory Acquisition
CAA	Civil Aviation Authority
CEMP	Construction Environmental Management Plan
CIC	Cable Installation Compound
CNP	Critical National Priority
CoCP	Code of Construction Practice
CoS	UK Chamber of Shipping
DCO	Development Consent Order
dDCO	Draft Development Consent Order
DML	Deemed Marine Licence
DIO	Defence Infrastructure Organisation
EA	Environment Agency
ECC	Export Cable Corridor
EMP	Ecological Management Plan
EIA	Environmental Impact Assessment
EL	Examination Library
ES	Environmental Statement
ExA	Examining Authority
EM	Explanatory Memorandum
GLIVIA	Guidelines for Landscape and Visual Impact Assessment
GW	Gigawatt
HGV	Heavy Goods Vehicle

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

HDD	Horizontal Directional Drilling
HRA	Habitats Regulations Assessment
ICNIRP	International Commission for Non-Ionizing Radiation Protection
IDB	Internal Drainage Board
IDRBNR	Inner Dowsing Race Bank North Ridge
IP	Interested Parties
JNCC	Joint Nature Conservation Committee
LAT	Lowest Astronomical Tide
LCA	Landscape Character Areas
LCC	Lincolnshire County Council
LMP	Landscape Management Plan
LWT	Lincolnshire Wildlife Trust
LIR	Local Impact Report
LNRS	Local Nature Recovery Strategy
LPA	Local Planning Authority
MCA	Maritime and Coastguard Agency
MMO	Marine Management Organisation
MOD	Ministry of Defence
MRF	Marine Recovery Fund
NAS	Noise Abatement Systems
NE	Natural England
NGET	National Grid Electricity Transmission Plc

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NGSS	National Grid Substation
NPS	National Policy Statement
NRA	Navigational Risk Assessment
NSIP	Nationally Significant Infrastructure Project
OCC	Onshore Cable Corridor
OLEMS	Outline Landscape and Ecological Management Strategy
OnSS	Onshore Substation
OP	Offshore Platforms
ORCP	Offshore Reactive Compensation Platform
OTNR	Offshore Transmission Network Review
OWF	Offshore Wind Farm
PADSS	Principal Areas of Disagreement Summary Statement
PPEIRP	Pollution Prevention and Emergency Incident Response Plan
PRoW	Public Rights of Way
PSR	Primary Surveillance Radar
R	Requirement
RR	Relevant Representation
RVAA	Residential Visual Amenity Assessment
SAC	Special Areas of Conservation
SLVIA	Seascape, Landscape and Visual Impact Assessment
SoCG	Statement of Common Ground
SoR	Statement of Reasons

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.

SoS	Secretary of State
SoS DESNZ	Secretary of State for Energy Security and Net Zero
SMP	Soil Management Plan
SSSI	Site of Special Scientific Interest
TCC	Temporary Construction Compound
TP	Temporary Possession
UXO	Unexploded Ordnance
WAM	Wide Area Multilateral
WCS	Worst Case Scenario
WQMMP	Water Quality Management and Mitigation Plan
WMS	Written Ministerial Statement
WTG	Wind Turbine Generator

ExAQ1: T.H. Clements & Son Limited's comments, on Applicant's comments, on T.H. Clements responses to ExA Q1 (Interested Party Reference 20049059)

Please Note: T.H. Clements' comments on the Applicant's comments on ExQ1 Responses refer the Examining Authority to T.H. Clements' relevant submissions.