The Great Grid Upgrade

Sea Link

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Preliminary Minerals Resource Assessment

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1. Introduction

1.1 Overview

1.1.1 This Minerals Resource Assessment (MRA) has been produced to inform **Application Document 6.2.2.5 Part 2 Suffolk Chapter 5 Geology and Hydrogeology** of the Suffolk Onshore Scheme Environmental Statement for the Sea Link Project. This appendix has been prepared to provide baseline information on minerals present within the study area and identify the potential effects of the Proposed Project on Mineral Safeguarding Areas (MSA) and/or Mineral Consultation Areas (MCA) with the purpose of establishing the potential impact on mineral resources of economic importance and to consider whether further consideration and mitigation is required.

1.1.2 As described in **Application Document 6.2.2.5 Part 2 Suffolk Chapter 5 Geology and Hydrogeology** of the Environmental Statement, the study area for geology comprises the draft Order Limits plus a 250 m buffer.

1.1.3 This MRA has been written with regard to Minerals Safeguarding Practice Guidance (Minerals Production Association, 2019) which provides guidance on the scope and format of the MRA.

1.1.4 The need for the Proposed Project is set out in **Application Document 6.2.1.1 Part 1 Introduction Chapter 1 Introduction**.

1.2 Minerals policy and planning

National Policy Statements

1.2.1 As described in **Application Document 6.2.1.2 Part 1 Introduction Chapter 2 Regulatory and Planning Policy Context** of the Environmental Statement, when determining an application for development consent, the Planning Inspectorate is required to have regard for the relevant National Policy Statements (NPS). The two relevant NPS for the Proposed Project are the Overarching NPS for Energy (EN-1) (Department for Energy Security and Net Zero, 2023). and the NPS for Electricity Networks Infrastructure (EN-5) (Department for Energy Security and Net Zero, 2023). However, EN-5 does not discuss minerals.

1.2.2 Paragraph 5.11.19 of EN-1 states, "*Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place"*.

1.2.3 Paragraph 5.11.28 of EN-1 states,"*Where a proposed development has an impact upon a Mineral Safeguarding Area, the Secretary of State should ensure that appropriate mitigation measures have been put in place to safeguard mineral resources"*.

1.2.4 Although the relevant NPS provide the primary policy against which the Proposed Project should be decided, regional and local policy documents may also be considered important and relevant to decision-making. Therefore, the relevant minerals plans have been considered when developing this MRA.

National Planning Policy Framework

1.2.5 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities & Local Government, 2024) paragraphs 215 to 223 describe how planning policies should facilitate the sustainable use of minerals.

1.2.6 Paragraph 223 states that *"Planning policies should*:

c) Safeguard mineral resources by defining Mineral Safeguarding Areas and Mineral Consultation Areas; and adopt appropriate policies so that known locations of specific mineral resources of local and national importance are not sterilised by non-mineral development where this should be avoided (whilst not creating a presumption that the resource defined will be worked);

d) set out policies to encourage the prior extraction of minerals, where practical and environmentally feasible, if it is necessary for non-mineral development to take place'

1.2.7 The NPPF also states in paragraph 226 that '*Minerals planning authorities should plan for a steady and adequate supply of aggregates by*: …

f) maintaining landbanks of at least 7 years for sand and gravel … whilst ensuring that the capacity of operations to supply a wide range of materials is not compromised".

Local Planning Policy

1.2.8 The Suffolk Minerals and Waste Local Plan (Suffolk County Council, 2020) was adopted in July 2020. The policies map within the adopted Minerals Local Plan identifies that "*Sand and gravel resources are located throughout the County"*. The adopted plan indicates that parts of the study area, are located within the Suffolk Minerals Consultation Area (MCA), as shown on **Application Document 6.4.2.5.4 Mineral Resources**.

1.2.9 Policy MP10 of the Suffolk Minerals and Waste Local Plan (Suffolk County Council, 2020) advises that these areas will be safeguarded from proposed development of more than 5 ha. As the Order Limits exceed 5ha within an MCA, a MRA has been produced to demonstrate that "*the sand and gravel present is not of economic value, or not practically or environmentally feasible to extract, or that the mineral will be worked before the development takes place or used within the development"* in accordance with Policy MP10.

1.2.10 It is also noted that the Order Limits of the Proposed Project do not interact with any existing minerals infrastructure.

1.3 Local Aggregate Assessment

1.3.1 The current landbank for various aggregates for any given Minerals Planning Authority is usually documented in a Local Aggregate Assessment (LAA) which reports annually on aggregate supply and demand within the relevant planning area.

1.3.2 The most recent LAA for Suffolk (Suffolk County Council, 2024) reflects the position at the end of 2022. This contains the following relevant information:

- **Sand and Gravel Sales**: The 10-year average sales have decreased slightly since the previous LAA and currently stands at 1.077 Mt as of December 2022, however the 3-year average was slightly higher at 1.083 Mt.

- **Sand and Gravel Landbank**: The landbank of permitted reserves as of December 2022, based on the 10-year sales average, was 9.555 years which is slight decrease from the previous LAA. This is greater than the seven-year requirement set out in the NPPF.
- **Mineral Permitted Reserves**: The LAA for Suffolk does not provide information on minerals extraction sites that are in the process of obtaining planning permission or those that have been recently granted permission. The LAA does state there are currently 15 sand and gravel quarries in Suffolk, however further details on whether they are currently active or dormant are not presented.

1.3.3 The evidence from the LAA indicates that there is no current or foreseeable shortage of sand and gravel reserves in Suffolk.

2. Existing baseline

2.1 Published Geology

2.1.1 The superficial geology in the study area is generally identified as Lowestoft Formation comprising "*chalky till, together with outwash sands and gravels, silts and clays*" (BGS, 2024). The nature of the Lowestoft Formation present is heavily influenced by the river network in the area.

2.1.2 Outside of the river network the Lowestoft Formation diamicton is indicated to be present, but where the rivers have eroded the diamicton, then sand and gravels of the Lowestoft Formation are indicated to be present. Limited areas of clay and silt are also shown within the sides of the river valleys.

2.1.3 Elsewhere within the study area the Marine Beach Deposits, Tidal Flat Deposits, Alluvium and Head deposits are also indicated to be present, and there are some areas of the study area where superficial deposits are indicated to be absent.

2.1.4 The bedrock geology is indicated to comprise the Crag Formation in the northern two-thirds of the study area and the Chillesford Church Sand Member in the southern third. The Thames Group, Lambeth Group and White Chalk Subgroup are anticipated to underlie the Crag Formation and the Chillesford Church Sand Member.

2.1.5 The geology of the study area is shown on **Application Document 6.4.2.5.1 Superficial Geology** and **Application Document 6.4.2.5.2 Bedrock Geology** and discussed in detail within **Application Document 6.2.2.5 Part 2 Suffolk Chapter 5 Geology and Hydrogeology**.

2.2 Site specific ground conditions

2.2.1 An intrusive ground investigation was undertaken across parts of the Proposed Project between September and October 2023 and a Ground Investigation Report for the Suffolk Onshore Scheme was completed by Mott Macdonald and provides information on the ground conditions, this is included as **Application Document 6.3.2.5.D Appendix 2.5.D Ground Investigation Report - Suffolk**. The ground investigation generally confirmed the anticipated geology, including the presence of sand and gravel deposits across the study area.

2.3 Mineral assessment report

2.3.1 There is no mineral assessment report that covers the study area for the Proposed Project.

3. Assessment

3.1 Effects of the Proposed Project on Safeguarded Extents

3.1.1 The policies map accompanying the Suffolk Minerals and Waste Local Plan (Suffolk County Council, 2020) indicates that approximately 70% of the Suffolk Onshore Scheme Order Limits are within a MCA, predominantly for sands and gravels, as shown on **Application Document 6.4.2.5.4 Mineral Resources**. The county of Suffolk is approximately 3,800 km^2 in area, and approximately 52% of the county is located within an MCA. The Order Limits are the largest extents of the Proposed Project covering the entire potential working area of the Proposed Project which equates to approximately 0.1% of the Suffolk MCA. However, the Order Limits do not represent the actual area where mineral may be sterilized (eg underground cables, pylons, converter and substations). The physical footprint of the operational Project components is a very small proportion of the Order Limits and an even smaller proportion of the MCA.

3.1.2 The majority of the route is proposed to comprise predominantly underground cables located within relatively shallow trenches (approximately 1.5 m below ground level). This infrastructure is generally considered to be temporary, as although during the operational lifetime of the Proposed Project the areas of mineral could not be feasibly extracted (beneath the built elements), on decommissioning, the infrastructure could be removed and access to the underlying mineral restored.

3.1.3 Granular deposits with the potential to be considered economic mineral are generally found to be present across the majority of the Order Limits below around 1 m – 3 m of overburden material generally. Therefore, the majority of the Proposed Project underground infrastructure is likely to be located within overburden material.

3.2 Engineering, Construction and Environmental Considerations

3.2.1 Prior extraction refers to the removal of a mineral resource, to prevent sterilisation, prior to the commencement of construction works on a project. Incidental extraction refers to the removal of a mineral resource during the construction of a project. In both scenarios there is the option to extract only the mineral that is encountered during the normal construction works required to facilitate the Proposed Project, or to go further than the normal construction requirements and excavate all the accessible mineral beneath any built parts of the Proposed Project.

3.2.2 For both prior and incidental extraction, removal of all accessible mineral by over deepening (and potentially widening) excavations beyond the normal construction requirements is not considered feasible due to the additional engineering requirements that would be needed during and following mineral extraction. Over deepening excavations to access and remove the mineral will require additional stability considerations for the excavations and may create new or additional impacts on hydrogeology that would require assessment and mitigation. In addition, the over deepened excavations would require backfilling with suitable material to reach the design depth. This would have a significant negative impact on the construction programme and costing for the Proposed Project, and may have additional significant

environmental impacts (noise, dust, traffic, landscape and visual) that would need separate consideration due to the cumulative scale.

3.2.3 The mineral across the majority of the Proposed Project is also present below a significant thickness of overburden. Therefore, both prior or incidental extraction could require excavation and storage of significant volumes of overburden during extraction of the mineral that may require additional land outside of the current Order Limits. It could also mean that the trenches etc would need to be enlarged (in terms of depth and lateral extent) beyond the current proposed footprint of the Proposed Project in order to reach the mineral below. The resultant over-enlarged void(s) would need to be backfilled with appropriate material, and this requirement for additional materials would add additional cost to the Proposed Project including the additional construction work required to extract the minerals and back fill the void as discussed above.

3.2.4 Prior extraction of the mineral would also result in both additional cost and delay to the programme affecting both National Grid's duty to be economic and efficient and put at risk meeting the proposed operation date of the Proposed Project. which could also risk not meeting the Government's target of delivering a net-zero electricity system by 2030.

3.2.5 It is also considered that due to the long relatively narrow corridor that comprises the Order Limits, and the typically shallow depths of the proposed cable trenches, the potential (from a cost and practical perspective) for either prior or incidental extraction in the context of the relatively low volume of mineral likely to be extracted is limited. This is before consideration of the quality and value of the mineral (which may further reduce the volume of quality economic mineral). The cumulative costs of extraction of the mineral, the transport of the mineral to an off-site facility for processing and the subsequent infilling of the void, together with the potential environmental implications and geotechnical engineering enhancement needed to facilitate construction of the Proposed Project is considered to significantly outweigh the economic value of the extracted mineral.

3.3 Conclusion

3.3.1 National Grid acknowledges that large parts of the study area are located within a MCA, which also extends beyond the study area, across substantial areas of Suffolk. Even if the full extent of the Order Limits within a MCA were to sterilise mineral of sufficient quality and extent to be economically valuable, the extent of the sterilised area is very small in comparison to the extent of the MCA. Therefore, in the context that only a relatively small proportion of the Order Limits will sterilise potential mineral resource, the quantity of mineral that could be sterilised by the Proposed Project is considered to be insignificant in the context of the extensive occurrence of the minerals (predominantly sand and gravel) within the county and the national need/significance of the Proposed Project.

3.3.2 In addition, whilst there are MCAs within the study area, the existence, extent and quality of mineral within them is not proven and is anticipated to be highly variable. Therefore, not all of the safeguarded areas may contain mineral, or mineral of sufficient quality or economic value.

3.3.3 Consideration has been given to prior and incidental extraction of minerals as part of the Proposed Project construction programme. This has also shown that the increase in cost associated with the extraction would likely increase the overall cost of the entire Proposed Project and would conflict with National Grid's duty to be economic and efficient. In relation to the relatively small volume of mineral of unknown quality and

economic value that could be realised, neither prior nor incidental extraction are considered to be sustainable.

3.3.4 The likely additional time that would need to be added to the construction schedule, to include the extraction of the mineral, would mean that National Grid could miss the Proposed Project's intended delivery date, which could also risk the meeting of the Government target of a net-zero electricity system by 2030. Therefore, it is considered that in the context of the additional cost and time required, prior/incidental extraction of mineral is not practical or feasible.

3.3.5 The NPS (Department for Energy Security and Net Zero, 2023) requires that developments should safeguard minerals as far as possible and in consideration of the land use following decommissioning. Whist it is acknowledged that some temporary sterilisation of some small areas of minerals resources may occur associated with the Proposed Project, these resources will be available following decommissioning of the Proposed Project

3.3.6 The NPPF (Ministry of Housing, Communities & Local Government, 2024) encourages prior extraction of minerals '*where practical and feasible'*, and this MRA indicates that this requirement is not met on the Proposed Project as it would not be practical to extract the mineral prior to or during development. This is also echoed within the Suffolk Minerals and Waste Local Plan (Suffolk County Council, 2020) Policy MP10 which states the Council will object to development within a MCA *"unless it can be shown that the sand and gravel is not of economic value, or not practically or environmentally feasible to extract".* It is considered that this MRA demonstrates that the Proposed Project complies with this policy.

3.3.7 Based on the national significance of the Proposed Project and that Suffolk County Council has more than the seven-year land bank of sand and gravel, as required by the NPPF (Ministry of Housing, Communities & Local Government, 2024), and sufficient additional safeguarded mineral, it is considered that the potential impact of sterilising the small volume associated with the Proposed Project is acceptable without further consideration or mitigation.

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