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Dear [redacted]

MLA/2013/00072/5 Nemo Link - UK to Belgium Interconnector. Post construction saltmarsh survey report for Year 5 monitoring

Thank you for your consultation dated 02 October 2023. The following constitutes Natural England's formal statutory response.

Overarching Comments on Year 5 post-construction monitoring report

Natural England welcome Nemo Link's submission of the Year 5 post-construction monitoring report. We recognise that the report does address and subsequently try to resolve, Natural England's comments from the Year 4 monitoring report. The report is a comprehensive review demonstrating the changes (both from an ecological and geomorphological point of view) that have occurred at the Sandwich Bay Special Area of Conservation (SAC), Thanet Coast and Sandwich Bay Special Protection Area (SPA) and Sandwich Bay to Hacklinge Marshes Site of Special Scientific Interest (SSSI) sites, both historically and following cable installation. The inclusion of historical maps, aerial imagery and Lidar data enable full representation of the visible impacts of the cables on the saltmarsh and would be encouraged to be included in all future reports. It is recognised that the 5 year monitoring programme has been completed, as agreed with the original licence condition 5.2.22 of marine licence L/2013/00373/4. However, it is Natural England's view that the report indicates recovery of coastal saltmarsh is far from complete, and the Applicant does not provide a robust and objective review of the Conservation Objectives of the designated sites against the Year 5 monitoring report. Therefore, Natural England's position remains that we strongly recommend continued monitoring of the designated site with particular reference to the points outlined below.

Conservation Objectives: Sandwich Bay Special Area of Conservation (SAC) Thanet Coast and Sandwich Bay Special Protection Area (SPA) Sandwich Bay to	The Applicant's review of the Conservation Objectives outlined in Annex 1 in the cover letter dated 9th September 2023 does not appear to take into consideration all of the attributes of the designated features. There does not appear to be any accountability for the damage that has been caused to the saltmarsh. Whilst we recognise that the data suggests the saltmarsh is recovering from impacts caused by the Nemo Link cable installation, this habitat has not recovered to its pre-installation condition. Coastal saltmarsh and saline coastal lagoon are designated features of the Sandwich Bay to Hacklinge Marshes SSSI. Further considerations of the Common Standards Monitoring (CSM) guidelines are required: https://data.jncc.gov.uk/data/7607ac0b-f3d9-4660-9dda-

Hacklinge Marshes Site of Special Scientific Interest (SSSI)	0e538334ed86/CSM-SaltmarshHabitats-2004.pdf and Common Standards Monitoring Guidance for Lagoons (jncc.gov.uk) The CSM guidelines provide a list of attributes (ie extent, physical structure, vegetation structure, vegetation composition and negative indicators) relevant to saltmarsh covering all saltmarsh zones. We recommend referencing Table 14 (page 18-20) of that document as a minimum when considering saltmarsh recovery. However, as part of Natural England's ongoing work across several cable installation projects, where we are seeing saltmarsh recovery times taking longer than predicted, we now routinely recommend using a longer list of feature attributes based on the those used for SAC's. Whilst we note that Sandwich Bay SAC does not cover the saltmarsh communities, the Supplementary Advice for SACs contains a more comprehensive list of attributes that provide a fuller picture in relation to saltmarsh recovery following cable installation. For example, this list includes attributes on structure and function (including presence of unvegetated surfaces, surface elevation and topography, sediment size and availability); supporting processes (including tidal processes, morphology, water quality and adaptation and resilience), as well as those attributes considered through the CSM. We have included a copy of these attributes in Annex 1 of this document, and would like to see a review of the Conservation Objectives outlined in the cover letter dated 9th September 2023 to take these into account.
Future Monitoring: Coastal Lagoon	Natural England advise that surveys of the saline lagoon should begin imminently. This will establish baseline data of the current salinity and status of key indicator species status which will provide understanding of the future outlook of the saline lagoon. We advise that a sampling strategy is designed for water quality and ideally, invertebrate sampling, at randomised sample points across the lagoon. This will establish baseline data of water quality, salinity and status for key indicator species. We advise that water quality sampling could be carried out using continuous data loggers and visual surveys. Natural England advises that data loggers and visual surveys are undertaken over an appropriate period of time to show any seasonal and annual tidal changes. We advise collecting data on invertebrate species to enable species composition comparisons between different sections of the lagoon. Identifying gradients of impact between the north and south areas of the lagoon as well as species presence, absence or colonisation. Where appropriate, power analysis should be used to ensure the survey effort is robust.
Future Monitoring: Saltmarsh Surveys	Natural England suggest further survey work to be completed in 2025, as Year 8 and 2027, as Year 10 of the future monitoring programme, to determine the trajectory and speed of recovery of coastal saltmarsh. Quadrat surveys in Years 8 and 10 should focus on Zones 3, 4, 6 and 7 where the majority of the impacts have occurred, while the topographic survey should be repeated in year 10. We are of the understanding that the extra quadrat data may help determine the cause of the *Spartina* sp. die-back while ascertaining whether the sediment shrinkage evidenced in

	2022 is evidence of permanent change. We strongly recommend the importance of keeping the same survey team and organisation to limit variations to methodology and post-analysis. We have advised previously on the collection of soil compaction data and still advise that this be included in future monitoring reports.
Additional Comments	Natural England agree with paragraph 8.5 page 104 of the report. We recognise the challenges in making comparisons between pre and post construction due to the low-level data and insufficient samples in previous topographic and quadrat surveys. We agree that restoration interventions to artificially rebuild the ridge would result in further damage to the saltmarsh as is outlined in the below statement in 8.11 page 105. *"Based on the results of the 5 years of post-construction monitoring it is concluded that there is currently no physical or biological mechanism by which the higher saltmarsh ridge in the vicinity of the transition joint bay is likely to recover to its former state. However, the resulting increased frequency of tidal incursion are contributing to a less variable water level and salinity regime within the Lagoon which may bring net benefits to the marginal saltmarsh vegetation. The existence of a 'gap' in the higher saltmarsh ridge has no bearing on the effects of extreme high tides (exceeding 2.90 m ODN) which are able to overtop the remaining ridge in numerous places. Artificially re-building the ridge would be likely to bring few if any benefits to the functioning of the lagoon and its surrounding vegetation, and would risk further damage to the surrounding saltmarsh communities."* In the concluding section of the report there is evidence of long-lasting, permanent changes to parts of the saltmarsh and the lagoon. These are particularly evident around the high ridge topography and associated vegetation. We draw particular reference to points a-i below that indicate recovery is not complete and support our recommendation that future monitoring post-construction is required: ***a.*** Minimal topographic recovery of the former high marsh ridge in the vicinity of the transition joint bay. ***b.*** Tidal incursion into the saline lagoon remains more frequent than before the cable installation works. ***c.*** Maximum water levels of lagoon are now lower than pre-construction (complete drying out is considered less likely due to the 'lip' at the north-eastern corner of the Lagoon – which is higher than it was). ***d.*** The lagoon now drains more quickly down the cable corridor on the ebb tide. ***e.*** There has been limited sediment deposition along the cable corridor – and the recent hot/dry summer of 2022 has likely caused shrinkage of the marsh by 5cm. ***f.*** A new sediment ridge has developed in the outer part of the marsh (sediment gain of around 15cm) which helping to reduce the frequency of inundation along the cable corridor. ***g.*** There are still several areas of pooling (particularly Pools A, B, and C) which remain unvegetated/ or sparsely vegetated and appear to be more or less permanent features. The extent of water and bare ground is variable. While noting natural pools

	existed before cable installation these pools (A-C) are new features. Colonization around these features is typically by annual species (or species associated with the pioneer zone). ***h.*** It is likely that the hot and dry conditions in the summer of 2022 has influenced the recovery of vegetation across the survey area. ***i.*** There seems to be a trend of increased coverage and density of *Spartina* in the outer marsh however there is also evidence of local die-back in the mid-marsh. The causation of both is unknown but it is likely assumed that the extreme weather conditions of 2022 have increased further stress on the vegetation succession.

Concluding summary and further recommendations

Natural England advises further assessments of the impacts of the cable installation on the Conservation Objectives of Sandwich Bay SAC, Thanet Coast and Sandwich Bay SPA and Sandwich Bay to Hacklinge Marshes SSSI are required. We recommend that the Year 5 monitoring report considers next steps which take into account the long-term recoverability of the coastal saltmarsh habitat. In the absence of a suitable restoration programme, Natural England strongly advise that the post-construction monitoring is continued as vegetation is still visibly recovering and in the pooled areas we are still yet to see recovery. In addition, there are questions around the future of the coastal lagoon in terms of frequency of tidal inundation with the development of the seaward ridge. We still require high confidence in the continued recoverability of the saltmarsh from the impacts of the cable landfall. Natural England welcome discussions relating to compensation for the damage to the coastal saltmarsh feature of the Sandwich Bay to Hacklinge Marshes SSSI.

As a final point, Natural England highlights our concerns around the delay in receiving this Year 5 post-construction monitoring report, which has resulted in a missed opportunity for monitoring to be completed in the summer of 2023. Monitoring this summer could have provided some answers to the concerns raised about the extreme weather conditions associated with the hot and dry summer of 2022, in particular the soil shrinkage and die back of *Spartina*. To enable a complete understanding of the integrity of the site and its current state and to enable further responses we require future monitoring reports to be submitted within a short timeframe.

Yours sincerely

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Marine Lead Advisor - Sussex and Kent

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Annex 1

Monitoring the recovery of Saltmarsh habitats: Table of attributes

Saltmarsh Attributes
Extent of the feature within the site.
Distribution of the feature, including associated transitional habitats, within the site.
Future extent of habitat within the site and ability to respond to seasonal changes.
Structure and function: presence and patterning of creeks and salt pans
Structure and function: presence of unvegetated surfaces.
Structure and function: sediment size and availability.
Structure and function: surface elevation and topography.
Structure and function (including its typical species): key structural, influential, and distinctive species.
Structure and function: vegetation community composition.
Structure and function: vegetation structure - zonation of salt marsh vegetation.
Structure and function: vegetation - undesirable species.
Supporting processes: adaptation and resilience (habitat).
Supporting processes: air quality (habitat).
Supporting processes: conservation measures (habitat).
Supporting processes: functional connectivity with wider coastal sedimentary system.
Supporting processes: morphological setting.
Supporting processes: pre-marsh processes
Supporting processes: sediment nutrient status and nutrient cycling.
Supporting processes: sedimentary processes.
Supporting processes: tidal processes.
Supporting processes: water quality (habitat).

Monitoring the recovery of coastal saline lagoon habitats: Table of attributes. Further information available here:

Saline Lagoon Attributes
Extent of basin
Isolating barrier – presence and nature
Salinity regime
Biotope composition of lagoon

Extent of sub-feature or representative/notable biotopes.
Extent of water
Distribution of biotopes
Species composition of representative of notable biotopes
Species population measures: Population structure, presence or abundance of specified species.
Water Depth

For further information please see Natural England’s designated sites hub:

SSSI detail (naturalengland.org.uk)