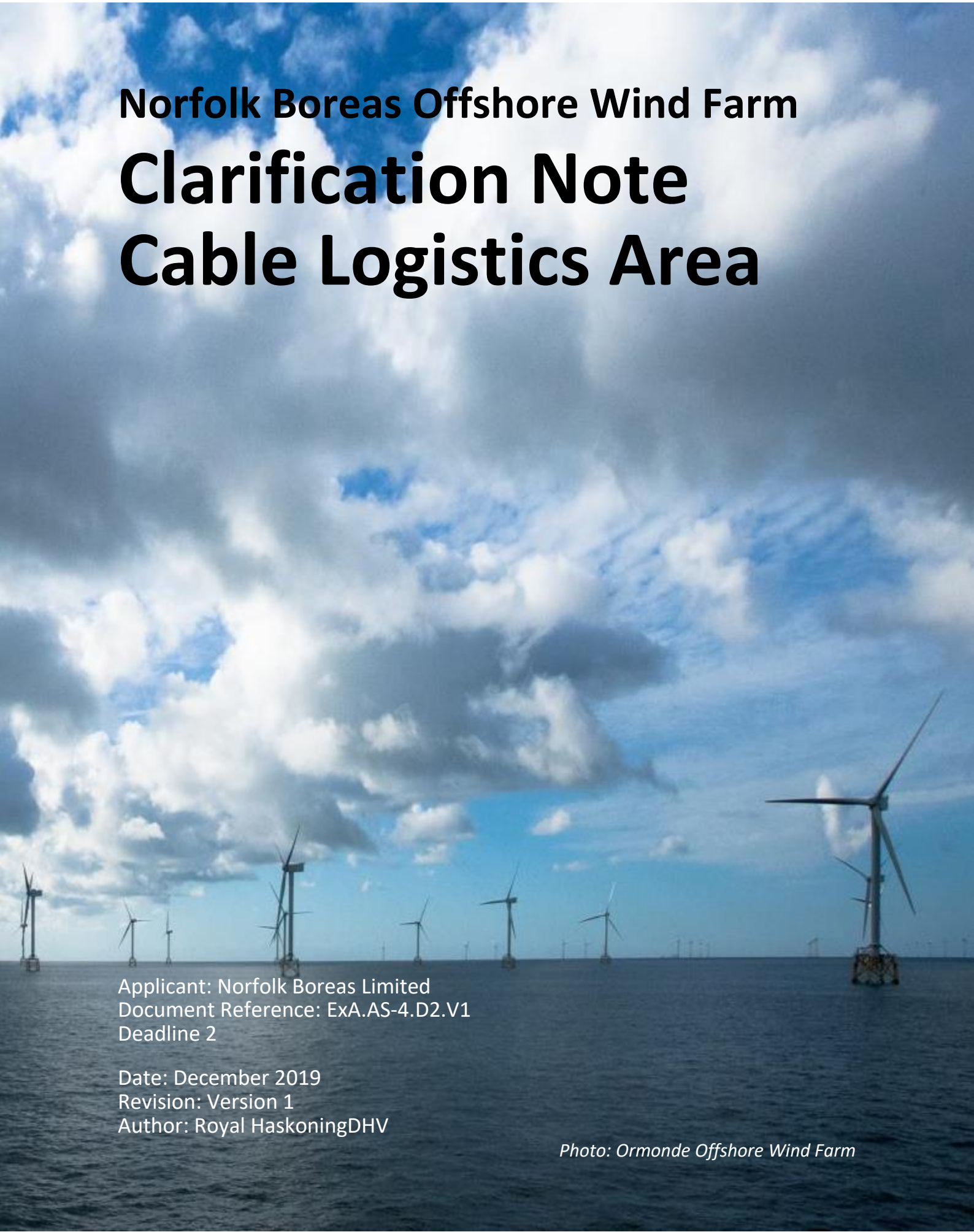
Royal HaskoningDHV
Enhancing Society Together

VATTENFALL



Norfolk Boreas Offshore Wind Farm

Clarification Note
Cable Logistics Area

Applicant: Norfolk Boreas Limited
Document Reference: ExA.AS-4.D2.V1
Deadline 2

Date: December 2019
Revision: Version 1
Author: Royal HaskoningDHV

Photo: Ormonde Offshore Wind Farm

Date	Issue No.	Remarks / Reason for Issue	Author	Checked	Approved
03/12/2019	01D	First draft for Deadline 2	RA	AR/CD/VR/AH	JL
05/12/2019	01F	Final for Submission at Deadline 2	RA	AR/CD/VR/AH	JL

Table of Contents

Glossary of Acronyms

DCO	Development Consent Order
ExA	Examining Authority
ES	Environmental Statement
HGV	Heavy Goods Vehicle
ISH	Issue Specific Hearing
OTMP	Outline Traffic Management Plan

Glossary of Terminology

Cable Logistics Area	Existing hardstanding area to allow the storage of cable drums and associated materials and to accommodate a site office, welfare facilities and associated temporary infrastructure to support the cable pulling works.
Cable Pulling	Installation of cables within pre-installed ducts from jointing pits located along the onshore cable route.
Ducts	A duct is a length of underground piping, which is used to house electrical and communications cables.
Onshore cables	The cables which take power and communications from landfall to the onshore project substation.
Onshore cable route	The up to 35m working width within a 45m wide corridor which will contain the buried export cables as well as the temporary running track, topsoil storage and excavated material during construction.

1 Introduction

1. The purpose of this clarification note is to assist understanding of the Applicant's proposed use of the cable logistics area and cumulative considerations with proposed adjacent projects. This note has been prepared as a direct response to Action 11 of the Issue Specific Hearing 1 (ISH1) Development Consent Order (DCO) Hearing Action Points (EV3-005) as requested by the Examining Authority (ExA).

2. The cable logistics area is a single location of existing hardstanding to allow the temporary storage of cable drums and associated cable jointing and pulling materials (e.g. pre-moulded joints, winches, cable runners) close to the cable route. This facility may also accommodate a site office, welfare facilities and associated temporary infrastructure to support the cable pulling works.

3. It is the Applicant's preferred strategy to deliver cable drums and associated materials directly to the jointing pit locations from the supplier(s) in a 'just in time' manner. The cable logistics area will seek to provide 'buffer' storage only, should delivery or installation issues arise (e.g. bad weather slowing cable pulling and jointing planned progress) which would require some deliveries of cables to be temporarily stored at the cable logistics area in a secure and controlled environment before the 'just in time' approach can be rescheduled and recommenced. The nature in which cable deliveries are made to port locations and on to the jointing pit locations will be defined during detailed design, guided by the supplier of the cable.

4. The cable logistics area would have the capacity to store approximately 20 cable drums. The total number of cable drums required for the entire Norfolk Boreas onshore cable route is approximately 360.

5. For context, if 100% of the cable drums had to be delivered to the cable logistics area prior to installation at the joint pit, and all cables are installed within a single year (single phase cable pulling as the worst case), this would represent an average of two cable drum deliveries per day (four HGV movements) over a worst case constrained 6 month cable installation period. Further details regarding traffic considerations to and from the cable logistics area are presented in Sections 2 and 4.

6. The proposed working hours are 07.00 to 19.00 Monday to Friday and 07.00 to 13.00 on Saturdays as defined in draft DCO Requirement 26. Working outside of these hours is only permitted for essential activities, and their duration and timing must be agreed in advance of the works with the relevant planning authority (save for emergency works). Cable drum deliveries would typically be by low loader which would not require night time delivery.

7. The cable logistics area is required under both Scenario 1 and Scenario 2, but only during the cable pulling stage of works, as outlined in Table 5.39 and Table 5.43 of

Environmental Statement (ES) Chapter 5 Project Description (document 6.1.5; APP-218). The cable logistics area would not be used during the duct installation (Scenario 2 only) or operational stages of the project.

8. The cable logistics area will be used for the same purpose under both scenarios and Norfolk Boreas have committed to adopting the traffic mitigation (as outlined in Section 3 of this document) for both scenarios, however under Scenario 1 the scheme will have already been implemented for the Norfolk Vanguard cable pulling works. Under Scenario 2 the scheme will be implemented in time for the Norfolk Boreas cable pulling works.

2 Location and Dimensions

9. The cable logistics area is located to the south east of Oulton on an area of existing hardstanding with large agricultural outbuildings, approximately half way along the cable route and is depicted in Sheet 18 of 42 in Document 2.4 Works Plan an updated version of which was submitted at Deadline 1 (document 2.4 Works plan (Part 2 of 4), REP1-005).

10. The ES assumes one compound with an area of approximately 4,190m^2 which is 100% existing hardstanding. As stated in the Written Summary of the Applicant's Oral Submissions at ISH 1 – draft DCO (REP1-041), the extent of the cable logistics area is defined and secured by the Order limits (Sheet 18 of 42 of the Works Plan, document 2.4, REP1-005) and has been assessed in this way in the ES.

3 Norfolk Boreas Traffic to and from the Cable Logistics Area for Scenario 1 and Scenario 2

11. The cable logistics area will be used during the cable pulling works under both scenarios, therefore traffic to and from the area will be the same under both scenarios. The cable logistics area is served by Link 68, which includes The Street starting from the junction with the B1149 to the junction with Heydon Road located approximately 950m north (shown on ES Figure 24.2a Map 4, APP-453).

12. For the cable pulling works a worst case assumption of 3 HGV deliveries per day is considered for storage of other materials associated with cable jointing and pulling and cement bound sand. The total daily HGV movements would be 10 and would consist of:

- Cable drums - 2 HGV deliveries per day (as outlined in paragraph 5); and
- Associated material - 3 HGV deliveries per day.

13. A conservative assumption of up to 20 employee vehicles per day at the cable logistics area is also provided for context. The HGV and employee traffic demand associated with the cable logistics area is included in the Scenario 1 worst case

scenario within ES Chapter 24 Traffic and Transport (APP-237) section 24.7.2. The same traffic demand applies to Scenario 2 cable pulling stage.

14. These movements are not explicitly included in the Scenario 2 worst case assessment as the duct installation period represents the maximum construction intensity period in terms of traffic and this therefore informs the worst case. During the cable pulling works (under both scenarios) the peak traffic demand for link 68 equates to 65 daily HGV movements, as shown in Table 1. These movements have been derived by calculating the maximum HGV demand for two onshore cable route number sections plus the HGV demand associated with the cable logistics area.

Table 1. Anticipated traffic numbers for the cable logistics area which have been accounted for in the worst case scenario for the affected link (Link 68)

Cable Pulling Stage of Works	Scenario 1	Scenario 2
Cable drum movements to Cable Logistics Area	4	4
Associated material movements to Cable Logistics Area	6	6
Link 68 peak daily HGV movements during cable pulling works (including movements to cable logistics area)	65	65
Hornsea Project Three peak daily HGV movements	118	118
Cumulative link 68 peak daily HGV movements	183	183*

*Not explicitly assessed under scenario 2 as duct installation stage of works presents the worst-case traffic flows.

15. The peak HGV traffic demand for Norfolk Boreas associated with the cable duct installation and the cable pulling works is contained in the Outline Traffic Management Plan (OTMP) Appendices document (document reference 8.8, REP1-024) in Appendix 1 Scenario 1 HGV Distribution and Appendix 2 Scenario 2 HGV Distribution.

3.1 Norfolk Boreas Traffic Mitigation

16. Norfolk Boreas Limited has committed to not routing HGV construction traffic along Oulton Street north of the junction between the Street and Heydon Road, as secured through the OTMP (REP1-022).

17. The Heydon Road section of Link 68 has been identified in the OTMP (REP1-022) as requiring mobile traffic management (pilot vehicles). Table 4.3 in the OTMP (REP1-022) highlights that “some localised carriageway widening may be required”, i.e. the introduction of passing places where required.

4 Norfolk Boreas Cumulative Traffic with Hornsea Project Three during Cable Pulling Works

18. The Street section of Link 68 serves Hornsea Project Three's main construction compound at Oulton Airfield which is predicted to generate 118 HGV daily movements over a three year 'Maximum Design Scenario' period.

19. In addition to the Norfolk Boreas cable logistics area, Link 68 also serves the Norfolk Boreas cable pulling construction access points AC84, AC85 and AC88 (shown in document 2.5 Access to works plan Sheets 18 and 19, APP-011) during the cable pulling works (under both scenarios).

20. As set out above, the cable pulling works, including traffic to the cable logistics area, are predicted to generate 65 daily HGV movements (Scenario 1 HGV movements, OTMP Appendix 1 (REP1-024). Thus, worst case cumulative traffic flows are predicted at 183 HGV daily movements on Link 68 (The Street) during the cable pulling works.

4.1 Cumulative Traffic Mitigation

21. There has been extensive consultation between Hornsea Project Three and Norfolk County Council with regards to a highways mitigation scheme to address cumulative impacts. Norfolk County Council has confirmed a preferred scheme option, which is summarised in Table 4.2 of the OTMP (REP1-022).

22. Norfolk Boreas Limited is committed to ongoing engagement with Norfolk Vanguard Limited, Hornsea Project Three, Broadland District Council, Cawston Parish Council and NCC to finalise the scheme design post-consent and is committed to adopting the preferred mitigation scheme option for Norfolk Boreas under both scenarios, to ameliorate the potential traffic impacts.

23. Under Scenario 1 the scheme will have already been implemented for the Norfolk Vanguard duct installation and cable pulling phase and will be retained for Norfolk Boreas cable pulling phase. Under Scenario 2 the scheme will be implemented for the duct installation and retained for the cable pulling works. The scheme would be introduced in full by the first project to proceed to construction and removed by the final project once all projects' construction phases are complete. This commitment, associated management of roadworks, and the process of coordination between the projects is captured in section 4.3.3 of the OTMP (REP1-022).

5 Summary

24. The cable logistics area will be used to support the cable pulling works under both scenarios. It is the Applicant's preferred strategy to deliver cable drums and associated materials directly to the jointing pit locations from the supplier, however

a small number of cable drums may be stored at the cable logistics area to act as a buffer in the event that delivery or installation issues arise. The cable logistics area would have the capacity to store approximately 20 cable drums. The cable logistics area may also accommodate a site office, welfare facilities and associated temporary infrastructure.

25. The total daily HGV deliveries to the cable logistics area (cable drums and associated material) is considered to be up to 5 per day (10 HGV movements per day) and up to 20 employee vehicles per day.

26. The cable pulling works, including traffic to the cable logistics area, are predicted to generate 65 HGV daily movements (Scenario 1 HGV movements, OTMP Appendix 1 (REP1-024). The worst case cumulative traffic flows with Hornsea Project Three are predicted at 183 HGV daily movements on Link 68 (The Street) during the cable pulling works which includes both traffic to the cable logistics area and traffic to cable pulling locations along Link 68. The HGV and employee traffic demand associated with the cable logistics area is not required for Scenario 2 as the duct (installation / primary works) period represents the maximum construction intensity period in terms of traffic for Scenario 2 and this therefore informs the worst case.

27. Traffic mitigation has been identified to address cumulative impacts and is secured through the OTMP (REP1-022).