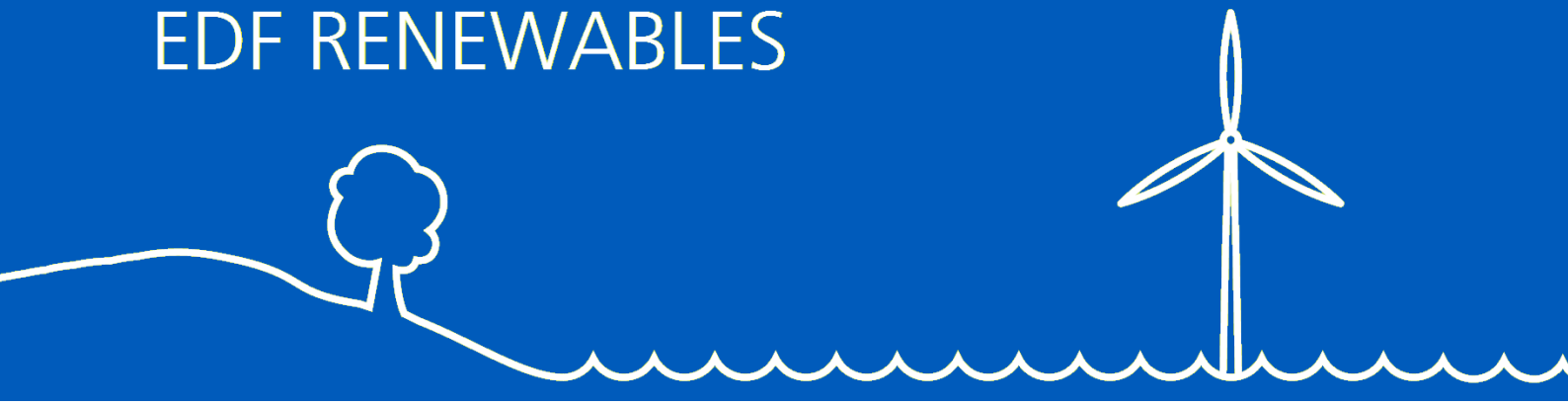
EDF RENEWABLES



Neart na Gaoithe Offshore Wind Farm

Construction Traffic Management Plan

Revision 1.0

November 2019

DOCUMENT REFERENCE: NNG-NNG-ECF-PLN-0014

NnG OFFSHORE WIND

EDF renewables

Neart na Gaoithe Offshore Wind Farm

Construction Traffic Management Plan

Pursuant to Section 36 Consent Condition 29 and the Marine Licence (Offshore Transmission Works) Condition 3.2.2.23

For the approval of the Scottish Ministers

DOCUMENT APPROVAL		
Name (Role)	Signature	Date
David Sweenie Development Manager	[Redacted]	15/11/19
Ewan Walker Consents Team Lead		15/11/19
Sarah MacNab Environmental Clerk of Works		14/11/19

Plan Overview

Purpose and Objectives of the Plan

This Construction Traffic Management Plan (CTMP) has been prepared to address the specific requirements of the relevant conditions attached to the Section 36 (S36) Consent and Marine Licences (collectively referred to as the Offshore Consents) issued to Neart na Gaoithe Offshore Wind Limited (NnGOWL).

The overall objective of the CTMP is to set out the measures required to mitigate traffic and transport related effects resulting from the construction of the Neart na Gaoithe Offshore Wind Farm and associated Offshore Transmission Works (OfTW).

Scope of the Plan

The CTMP provides an overview of the onshore traffic and transport arrangements associated with the construction of the Project.

Major Project components will be transported by sea from their point of fabrication to offshore installation locations either directly or via a marshalling port. They will not be transported by road. As such, the CTMP does not need to consider any road traffic movements associated with delivery of wind turbines, pile foundations, jacket substructures, subsea cables, or Offshore Substation Platforms. Whilst the major components will be delivered by sea there will be road traffic movements arising from the installation of these components and these are described in this CTMP.

This document does not consider any works associated with the construction of the Onshore Transmission Works (OnTW), which are not relevant to the Offshore Consents.

Given the nature of the offshore construction works, this CTMP primarily focuses on the people-movements to and from the various ports and airports that have been identified for utilisation during the construction period.

Structure of the Plan

The CTMP is structured as follows:

- Sections 1 to 3 set out an introduction to the CTMP, the methodology, scope and objectives and statements of compliance. The process for making updates and amendments is also provided along with an overview of the Development;
- Section 4 provides an overview of the key roles and responsibilities for NnGOWL and its key contractors, potential ports and harbours to be used during construction and associated vehicle movements; and
- Section 5 provides details on the anticipated people and vehicle movements and the anticipated road based traffic and transport effects during the construction phase.

Plan Audience

The CTMP will be referred to by personnel involved in the construction of the Project.

Compliance with this CTMP will be monitored by the NnGOWL consents team supported by NnGOWL's Environmental Clerk of Works (ECoW) and externally by the Marine Scotland Licensing and Operations Team (MS-LOT).

Plan Locations

Copies of this CTMP are to be held in the following locations:

- NnGOWL Project Office;
- At the premises of the main Contractors acting on behalf of NnGOWL;
- All site offices dealing with offshore operations, including the Marine Coordination Centre; and
- With NnGOWL's ECoW.

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Acronyms and Abbreviations

TERM	DESCRIPTION
AADF	Annual Average Daily Flow
CMS	Construction Method Statement
CTMP	Construction Traffic Management Plan
CTV	Crew Transfer Vessel
DfT	Department for Transport
HGV	Heavy Goods Vehicle
IEMA	Institute of Environmental Assessment
IHT	Institute of Highways and Transportation
LGV	Light Goods Vehicle
NnGOWL	Neart na Gaoithe Offshore Wind Limited
NRTF	National Roads Traffic Forecast
OfTW	Offshore Transmission Works

Defined Terms

TERM	DESCRIPTION
Addendum	The Addendum of Additional Information submitted to the Scottish Ministers by NnGOWL on 26 July 2018.
Application	The Environmental Impact Assessment Report, Habitats Regulations Appraisal Report submitted to the Scottish Ministers by NnGOWL on 16 March 2018; the Addendum of Additional Information submitted to the Scottish Ministers by NnGOWL on 26 July 2018 and the Section 36 Consent Variation Report dated 08 January 2019.
Company	Neart na Gaoithe Offshore Wind Limited (NnGOWL) (Company Number SC356223). NnGOWL has been established to develop, finance, construct, operate, maintain and decommission the Project.
Consent Conditions	The terms that are imposed on the Company under the Offshore Consents that must be complied with
Consent Plans	The plans, programmes or strategies required to be approved by the Scottish Ministers (in consultation with appropriate stakeholders) in order to discharge the Consent Conditions.
Contractors	Any Contractor/Supplier (individual or firm) working on the Project, hired by NnGOWL.

TERM	DESCRIPTION
EIA Report	The Environmental Impact Assessment Report, dated March 2018, submitted to the Scottish Ministers by NnGOWL as part of the Application.
Inter-array Cables	The offshore cables connecting the wind turbines to one another and to the OSPs.
Interconnector Cables	The offshore cables connecting the OSPs to one another.
Marine Licences	The written consents granted by the Scottish Ministers under the Marine (Scotland) Act 2010, for construction works and deposits of substances or objects in the Scottish Marine Area in relation to the Wind Farm (Licence Number 06677/19/0) and the OfTW (Licence Number 06678/19/1), dated 4 June 2019 and 5 June 2019 respectively.
Offshore Consents	The Section 36 Consent and the Marine Licences.
Offshore Export Cable Corridor	The area within which the offshore export cables are to be located.
Offshore Export Cables	The offshore export cables connecting the OSPs to the landfall site.
OfTW	The Offshore Transmission Works comprising the OSPs, offshore interconnector cables and offshore export cables required to connect the Wind Farm to the Onshore Transmission Works at the landfall.
OfTW Area	The area outlined in red and blue in Figure 1 attached to Part 4 of the OfTW Marine Licence.
OnTW	The onshore transmission works from landfall and above Mean High Water Springs, consisting of onshore export cables and the onshore substation.
Project	The Wind Farm and the OfTW.
Section 36 Consent	The written consent granted on 3 December 2018 by the Scottish Ministers under Section 36 of The Electricity Act 1989 to construct and operate the Wind Farm, as varied by the Scottish Ministers under section 36C of the Electricity Act 1989 on 4 June 2019.
Section 36 Consent Variation Report	The Section 36 Consent Variation Report submitted to the Scottish Ministers by NnGOWL as part of the Application as defined above on 08 January 2019.
Subcontractors	Any Contractor/Supplier (individual or firm) providing services to the Project, hired by the Contractors (not NnGOWL).
Wind Farm	The offshore array as assessed in the Application including wind turbines, their foundations and inter-array cabling.
Wind Farm Area	The area outlined in black in Figure 1 attached to the Section 36 Consent Annex 1, and the area outlined in red in Figure 1 attached to Part 4 of the Wind Farm Marine Licence.

Consent Plans

CONSENT PLAN	ABBREVIATION	DOCUMENT REFERENCE NUMBER
Decommissioning Programme	DP	NNG-NNG-ECF-PLN-0016

CONSENT PLAN	ABBREVIATION	DOCUMENT REFERENCE NUMBER
Construction Programme and Construction Method Statement	CoP and CMS	NNG-NNG-ECF-PLN-0002
Piling Strategy	PS	NNG-NNG-ECF-PLN-0011
Development Specification and Layout Plan	DSLP	NNG-NNG-ECF-PLN-0003
Design Statement	DS	NNG-NNG-ECF-PLN-0004
Environmental Management Plan	EMP	NNG-NNG-ECF-PLN-0006
Operation and Maintenance Programme	OMP	NNG-NNG-ECF-PLN-0012
Navigational Safety Plan and Vessel Management Plan	NSP and VMP	NNG-NNG-ECF-PLN-0010
Emergency Response Cooperation Plan	ERCoP	NNG-NNG-ECF-PLN-0015
Cable Plan	CaP	NNG-NNG-ECF-PLN-0007
Lighting and Marking Plan	LMP	NNG-NNG-ECF-PLN-0009
Project Environmental Monitoring Programme	PEMP	NNG-NNG-ECF-PLN-0013
Fisheries Management and Mitigation Strategy	FMMS	NNG-NNG-ECF-PLN-0008
Marine Archaeological Reporting Protocol	MARP	NNG-NNG-ECF-PLN-0005
Construction Traffic Management Plan	CTMP	NNG-NNG-ECF-PLN-0014

1 Introduction

1.1 Background

1. The Neart na Gaoithe Offshore Wind Farm (Revised Design) received consent under Section 36 of the Electricity Act 1989 from the Scottish Ministers on 3rd December 2018 and was granted two Marine Licences by the Scottish Ministers, for the Wind Farm and the associated Offshore Transmission Works (OfTW). The S36 consent and Wind Farm Marine Licence were revised by issue of a variation to the S36 Consent and Marine Licence 06677/19/0 on 4th June 2019, and the OfTW Marine Licence by the issue of Marine Licence 06678/19/1 on 5th June 2019. The revised S36 Consent and associated Marine Licences are collectively referred to as 'the Offshore Consents'.
2. The Project is being developed by Neart na Gaoithe Offshore Wind Limited (NnGOWL).

1.2 Objectives of this Document

3. The S36 Consent and Marine Licences contain a variety of conditions that must be discharged prior to the commencement of any offshore construction works. One such requirement is for the submission to the Scottish Ministers of a CTMP for approval (Condition 29).
4. The relevant conditions setting out the requirement for the CTMP are set out in full in Table 1-1 below. This document is intended to fully satisfy the requirements of the Offshore Consents conditions by providing details of the construction related road traffic movements for the Project.

Table 1-1: Consent conditions to be discharged by this CTMP

OFFSHORE CONSENTS REFERENCE	CONDITION TEXT	WHERE ADDRESSED
Section 36 Consent **Condition 29**	The Company must, no later than six months prior to the Commencement of the Development submit a Construction Traffic Management Plan ("CTMP") in writing, to the Scottish Ministers for their written approval. Such approval may only be granted following consultation by the Scottish Ministers with Transport Scotland and any such other advisors as may be required at the discretion of the Scottish Ministers.	This document sets out the CTMP for approval by the Scottish Ministers.
	The CTMP must include but not be limited to: a) A mitigation strategy for the abnormal loads on the trunk road network including any accommodation measures required, incorporating the removal of street furniture, junction widening, or traffic management of road based traffic and transportation associated with the construction of the Development. All construction traffic associated with the Development must conform to the approved CTMP.	The anticipated vehicle movements, their impact on the road network and control measures are set out within sections 4, 5 and 6 of this CTMP.
	b) Any additional signing or temporary traffic control measures deemed necessary due to the size or length of loads being delivered as a result of the Development.	

1.3 Scope of the CTMP

5. It is noted that the focus of the CTMP condition is on the movement of abnormal loads on the trunk road network. Such conditions are highly relevant to onshore wind farms where turbine components are typically brought to site by road as a series of abnormal loads. As is typical for an offshore wind farm, all main components of this Project[1] will either be transported by sea from the port of origin direct to the Project area for installation; or, transported by sea from the port of origin to an intermediate 'marshalling' port local to the Project, assembled and then transported by sea to the Project area for installation. In the absence of any large structural components of the Project being transported by road, it could be argued that there is no requirement for a CTMP to support the offshore works, but in line with the requirements of the Offshore Consents and reflecting good practice, NnGOWL have prepared this document.

6. The CTMP provides an overview of the traffic and transport arrangements associated with the construction of the Project. This document considers a number of potential ports which have been identified as part of an ongoing procurement process. It will be updated should alternative port locations be selected which will require the movement of abnormal loads and/or other traffic movements that may result in significant effects on the road network.

7. Whilst the major components will be delivered by sea, there will be road traffic movements arising from the installation of these components. These movements include staff movements to and from Ports and Airports as a result of crew transfers to offshore vessels, the movement of staff and materials to the pre-assembly port and other ancillary movements. These movements are all described within this document.

8. This document does not apply to any works associated with the construction of the Onshore Transmission Works. A separate traffic management plan has been prepared for the Onshore Transmission Works in consultation with East Lothian Council in line with the requirements of onshore planning permission.

1.4 Guidance & Methodology

9. The following guidance documents have been taken into account in completing this CTMP:

- The Department for Transport (DfT) Guidance on Transport Assessment2;
- Transport Assessment Guidance (Transport Scotland)3;
- Institute of Highways and Transportation (IHT), 'Guidelines for Traffic Impact Assessment (1998)' 4; and
- The Institute of Environmental Assessment (IEMA) 'Guidelines for the Environmental Assessment of Road Traffic'5.

[1] Wind turbines, foundations (piles) and substructures (jackets), all subsea cables, Offshore Substation Platforms.
[2] Department for Transport (DfT, 2007) Guidance on Transport Assessment Available Online At: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263054/guidance-transportassessment.
[3] Transport Scotland (TS, 2012) Transport Assessment Guidance available online at: https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management__dpmtag_ref__17__-_transport_assessment_guidance_final_-_june_2012.pdf
[4] Institute of Highways and Transportation (IHT, 1998) Guidelines for Traffic Impact Assessment
[5] Institute of Environmental Assessment (IEA,1993) *Guidelines for the Environmental Assessment of Road Traffic*

10. DfT's Guidance suggests that transport assessment is only required for any development that generates 30 or more two-way movements in any hour.

11. The IEMA guidelines suggest two broad principles to be used as a screening process to delimit the scale and extent of any assessment. It is noted that there is no need to undertake an assessment of environmental impacts as part of the CTMP but it is useful to compare traffic levels against the IEMA thresholds to establish the level if impact and the need for further mitigation.

12. The anticipated traffic generated by the Project can be compared against the estimated baseline traffic. If the IEMA thresholds have not been exceeded, the significance of the effects can be considered to be low or not significant and further detailed assessments and mitigation are not warranted.

13. The IEMA guidelines state:

    - "Rule 1 - include road links where traffic flows are predicted to increase by more than 30% (or where the number of heavy goods vehicles is predicted to increase by more than 30%); and
    - Rule 2 - include any other specifically sensitive areas where traffic flows are predicted to increase by 10% or more".

14. Existing traffic levels for the roads in the vicinity of the ports and airports have been established from Department for Transport (DfT) traffic counts. Traffic count locations on trunk roads closest to the ports and airports have been used to indicate the typical traffic volumes.

15. Because baseline traffic levels are forecast to increase, these must be extrapolated to the anticipated year in which construction works will begin (indicated to be 2020). This calculation is performed using the National Roads Traffic Forecasting (NRTF) low growth factor between the count year and the worst case 2020 year.

1.5 Linkages with Other Consent Plans

16. This CTMP document sets out anticipated vehicle movements resulting from the Project, their impact on the road network and control measures. The CTMP is consistent with the Consent Plans listed in Table 1.2 below.

Table 1-2: CTMP consistency with other Consent Plans

CONSENT REFERENCE	CONSENT PLAN	CONSISTENCY WITH AND LINKAGE TO CTMP
Section 36 Consent, Condition 9, 10 **Wind Farm Marine Licence, Condition 3.2.2.8** **OfTW Marine Licence, Condition 3.2.2.7, 3.2.2.13**	Construction Programme and Construction Method Statement (CoP and CMS)	Assessment presented within this CTMP is based upon the durations of various works and methods of construction set out in the CoP and CMS.
Section 36 Consent, Condition 15, 17 **Wind Farm Marine Licence, Condition 3.2.2.12** **OfTW Marine Licence, Condition 3.2.2.11, 3.2.2.12**	Navigational Safety and Vessel Management Plan (NSVMP)	Describes vessel activity associated with the Project, and associated vessel management and navigational safety measures that will be adhered to. The CTMP is consistent with the assumptions made in the NSVMP regarding Scottish port locations that may be used to support Project construction.

1.6 CTMP Document Structure

17. This document is structured as set out in Table 1-3 below.

Table 1-3: CTMP document structure

SECTION		SUMMARY OF CONTENT
1	Introduction	Sets out consent requirements and an overview of CTMP scope.
2	NnGOWL Statements of Compliance	Sets out the NnGOWL statements of compliance in relation to the CTMP consented conditions.
3	Project Overview	Provides and overview of the Project.
4	Construction Activities and Vehicle Movements	Provides an overview of the harbours and airports that may be used to support construction and planned construction activities and their associated vehicle movements.
5	Construction Road Traffic	Provides an overview of the anticipated road traffic during the construction phase of the Project.
6	Compliance with the Application	Considers compliance of this CTMP with the original Application.

2 NnGOWL Statements of Compliance

18. NnGOWL (including NnGOWL's relevant contractors/subcontractors) will comply with this CTMP as approved by the Scottish Ministers.

19. Where updates or amendments are required, NnGOWL will ensure the Scottish Ministers are informed as soon as reasonably practicable and where necessary the CTMP will be updated and resubmitted for approval as required.

20. NnGOWL will comply with the limits defined by the Application and referred to in Annex 1 of the S36 Consent and Part 2 of the OfTW Marine Licence in so far as they apply to this CTMP (unless otherwise approved in advance by the Scottish Ministers).

3 Project Overview

21. The Wind Farm Area is located to the north-east of the Firth of Forth, 15.5 km directly east of Fife Ness on the east coast of Scotland. The Wind Farm Area covers approximately 105 km^2. Offshore Export Cables will be located within the 300m wide Offshore Export Cable Corridor, running in an approximately south-west direction from the Wind Farm Area, making landfall at Thorntonloch beach to the south of Torness Power Station in East Lothian. Figure 3-1 (overleaf) indicates the Wind Farm Area and Offshore Export Cable Corridor.

22. The Offshore Consents allow for the construction and operation of the following main components, which together comprise the Project:

- 54 wind turbines generating a maximum generating output of around 450 Megawatts (MW);
- 54 jacket substructures installed on pre-piled foundations, to support the wind turbines;
- Two alternating current (AC) substation platforms, referred to as Offshore Substation Platforms (OSPs), to collect the generated electricity and transform the electricity from 66kV to 220 kV for transmission to shore;
- Two jacket substructures installed on piled foundations, to support the OSPs;
- A network of inter-array subsea cables, buried and/or mechanically protected, to connect strings of turbines together and to connect the turbines to the OSPs;
- One interconnector cable connecting the OSPs to each other;
- Two buried and/or mechanically protected subsea export cables to transmit the electricity from the OSPs to the landfall at Thorntonloch and connecting to the onshore buried export cables for transmission to the onshore substation and connection to the National Grid network; and
- Minor ancillary works such as the deployment of metocean buoys and permanent navigational marks.

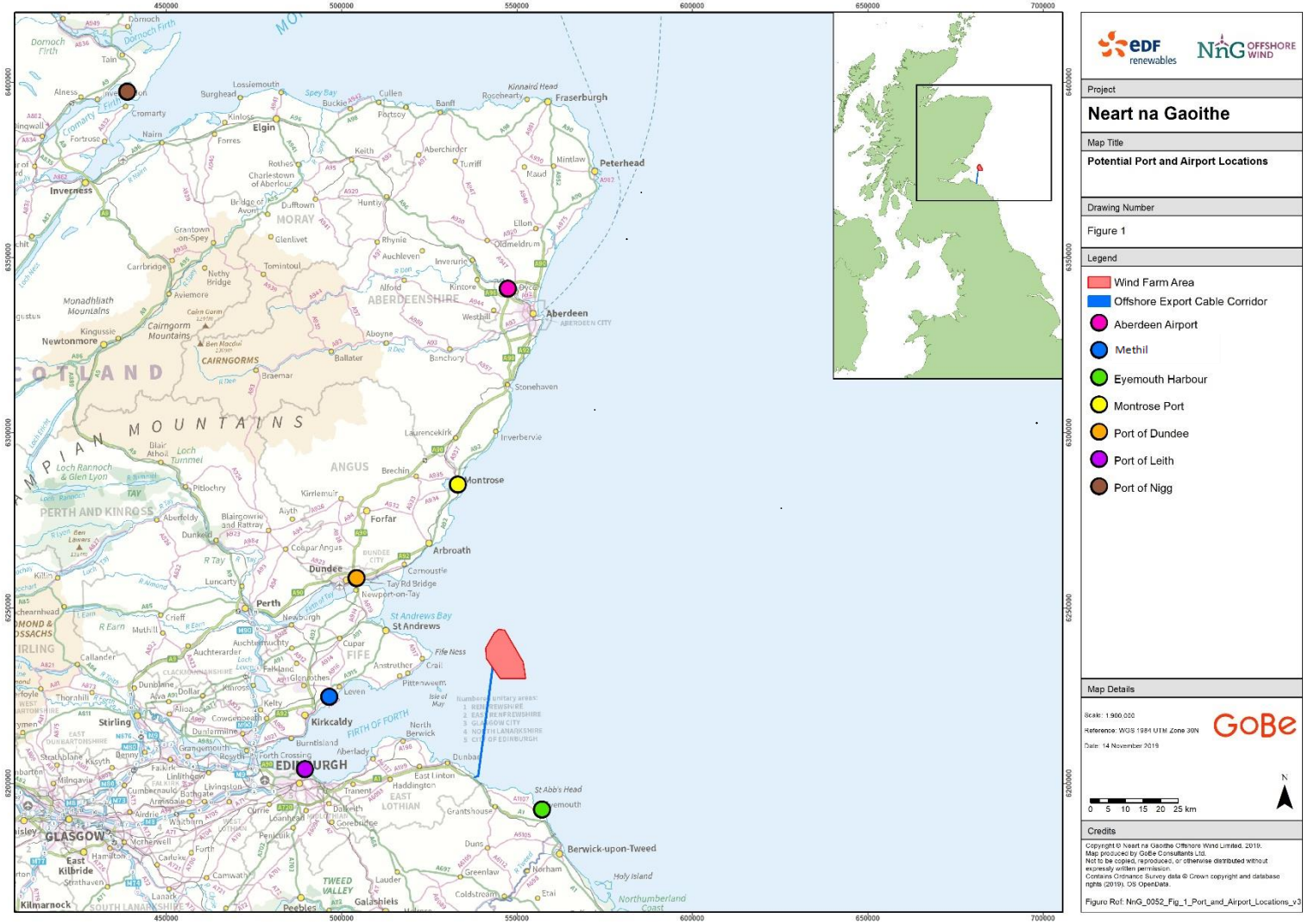

Figure 3-1: Project location and potential ports and airports supporting offshore construction

4 Construction Activities and Vehicle Movements

4.1 Introduction

23. This section details the main contractors and their roles, the main ports and airports used during the construction phase of the Project and an overview of the main activities associated with construction. From the identified activities, the associated road traffic volumes are calculated.

4.2 Construction Programme

24. It is currently anticipated that offshore construction will commence in Quarter 2 (Q2) 2020 and progress in line with the programme set out in the NnGOWL Construction Programme and Construction Method Statement (CoP and CMS).

25. The CoP and CMS outline the key activities and provide expected durations for each.

26. Durations for work elements have been taken from the CoP to estimate traffic associated with the respective construction activities.

4.3 Main Ports and Harbours

27. This section is intended to provide an overview of the focal points for construction related traffic movements. The following paragraphs outline the various Ports and Airports which could potentially be utilised during construction of the Project (see Figure 3-1 above), their roles in the construction phase and the trunk roads which serve them.

28. It should be noted that the final list of construction ports and harbours cannot yet be confirmed and this document presents a shortlist of those which could potentially be used. The traffic implications described later in this document represent a worst case for each potential location therefore it is not considered necessary to update this document when the final ports and harbours are confirmed.

4.3.1 Port of Dundee

29. The Port of Dundee is situated to the east of Dundee City Centre, approximately 3km along the A92 East Dock Street from the northern side of the Tay Bridge. The Port of Dundee is operated by Forth Ports.

30. The port lies on the northern side of the sheltered River Tay estuary and is adjacent to the ring road which circles the outskirts of Dundee, providing fast and efficient road links in and out of the city. A location plan of the port in relation to the city, the Tay River and the Tay Bridge can be seen in Figure 4-1.

31. The port has 1,600m of quayside and significant lay-down space that can be used for the assembly of wind turbines. It is served by the A92 which runs in an east-west direction directly north of the port and carries on southerly over the Tay Bridge into Fife, and northerly becoming the Kingsway, which ties in to the A90 and heads north towards Aberdeen. The A90 trunk road can also be accessed to the west of Dundee via the A85 providing access south to Stirling, Glasgow and the central belt.

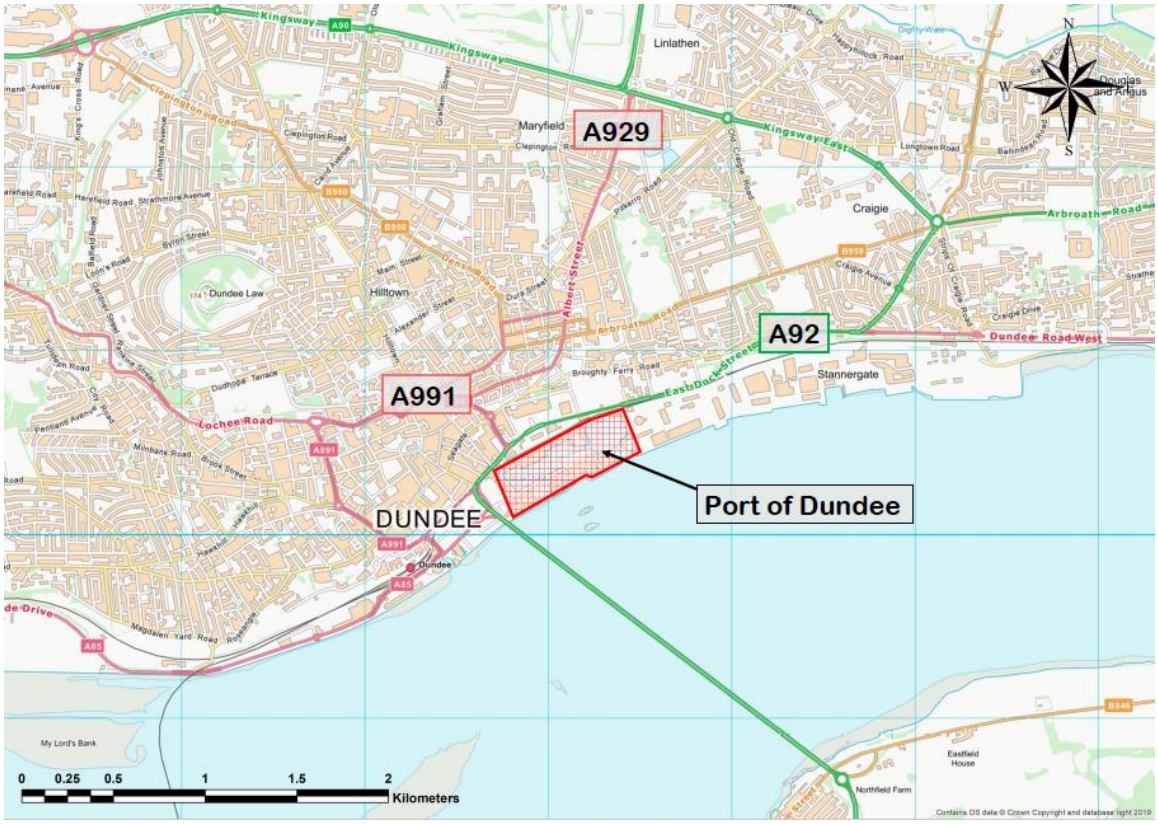

Figure 4-1: Port of Dundee Location Plan

32. The Port of Dundee may be used for wind turbine laydown and pre-assembly.

33. Wind turbine components would be delivered by sea from fabrication sites to a laydown area within the Port of Dundee for pre-assembly. Turbine components would then be transported to the Wind Farm Area by the installation vessel.

34. The main traffic movements generated by activity at the Port of Dundee would be associated with the workforce undertaking turbine pre-assembly works and crew transfers to and from offshore construction vessels. A smaller number of trips would be associated with the delivery of supplies and plant and transport of vessel waste away from the port.

35. It is noted that a large crane will be required to assist with pre-assembly. The crane to be used will be a mobile crane which can be broken down into component parts for transportation purposes. The crane to be used is moved on a regular basis and would be stripped of its main ballast weights for transportation with the ballast carried separately by low loader. The jib sections and other components can also be stripped down to enable transport.

36. The movement of the crane into and from the Port is likely to constitute the only abnormal load associated with the Project; it will be classified as an abnormal load on the basis of weight rather on any height width or length dimensions. As such, there are no proposals to alter the trunk or local road network in any way to accommodate the movement of the crane. Notwithstanding this, formal approval to move the crane would be sought from Transport Scotland if this was required by road and the movement would be planned in advance in consultation with the Transport Scotland Route Manager and the Police as appropriate.

4.3.2 Eyemouth Harbour

37. Eyemouth Harbour is situated in the Scottish Borders, along the eastern coast of Scotland and approximately 42km south of the Wind Farm Area. The Harbour is operated by Eyemouth Harbour Trust and is used by commercial and private stakeholders. The port is capable of accommodating 40m long vessels and there is approximately 280m of quay wall for berthing purposes.

38. The port lies approximately 3.6km to the north of the A1 Trunk Road. Access to the port from the A1 is via the A1107 to the south of Eyemouth and then via a good standard access road to the south of Eyemouth which sweeps around the eastern side of the town and into the port. A location plan of the port in relation to the town of Eyemouth can be seen in Figure 4-2 below.

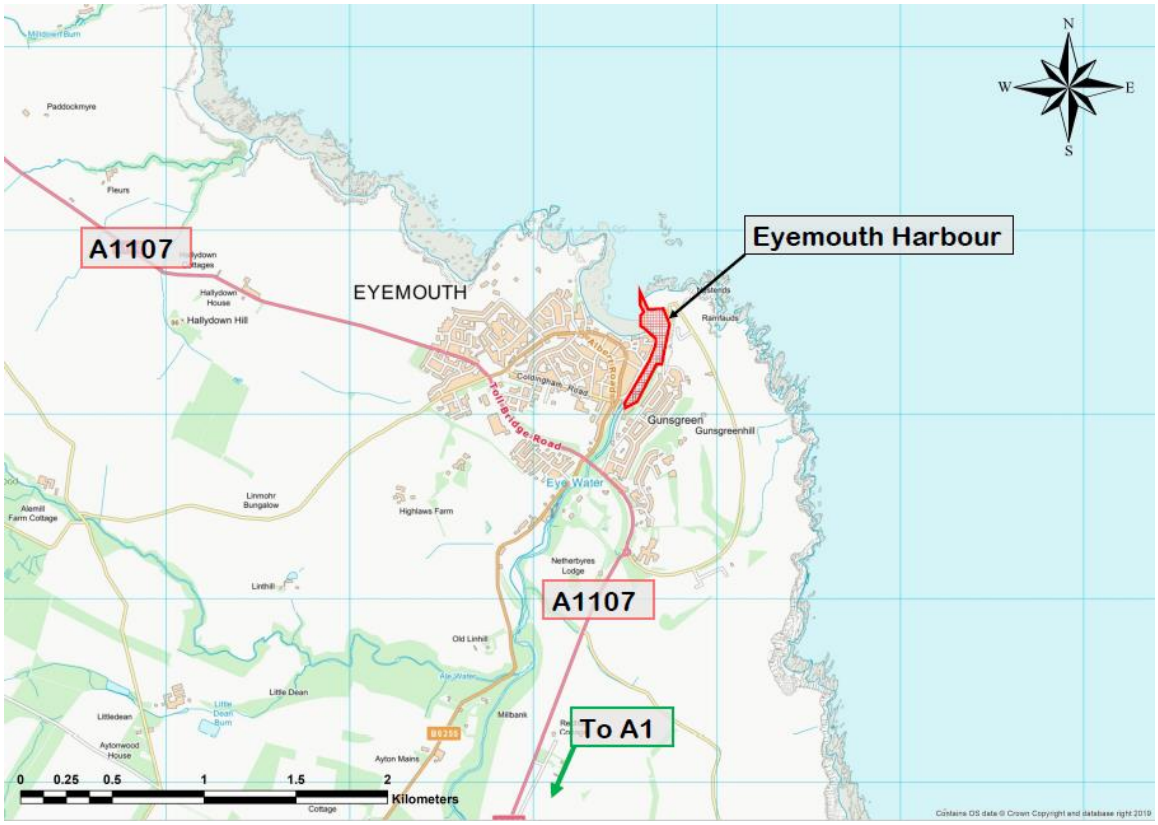

Figure 4-2: Eyemouth Harbour Location Plan

39. The role of Eyemouth Harbour in the construction of the Project could be to facilitate crew transfers to a variety of offshore construction and support vessels, minor transfer of supplies, fuel and waste, and to support the Project Marine Coordination Centre.

4.3.3 Montrose Port

40. Montrose Port is located along the north and south banks of the South Esk River in Montrose, approximately mid-way between Dundee and Aberdeen along the east coast of Scotland. The port is operated by Montrose Port Authority and is widely used by offshore oil and gas suppliers and the growing offshore renewables sector.

41. The port has approximately 1,000m of quayside facilities along with 130,000sqm of storage space and is able to offer berths to a depth of up to 8m.

42. A location plan of the port along the banks of the South Esk River can be seen below in Figure 4-3.

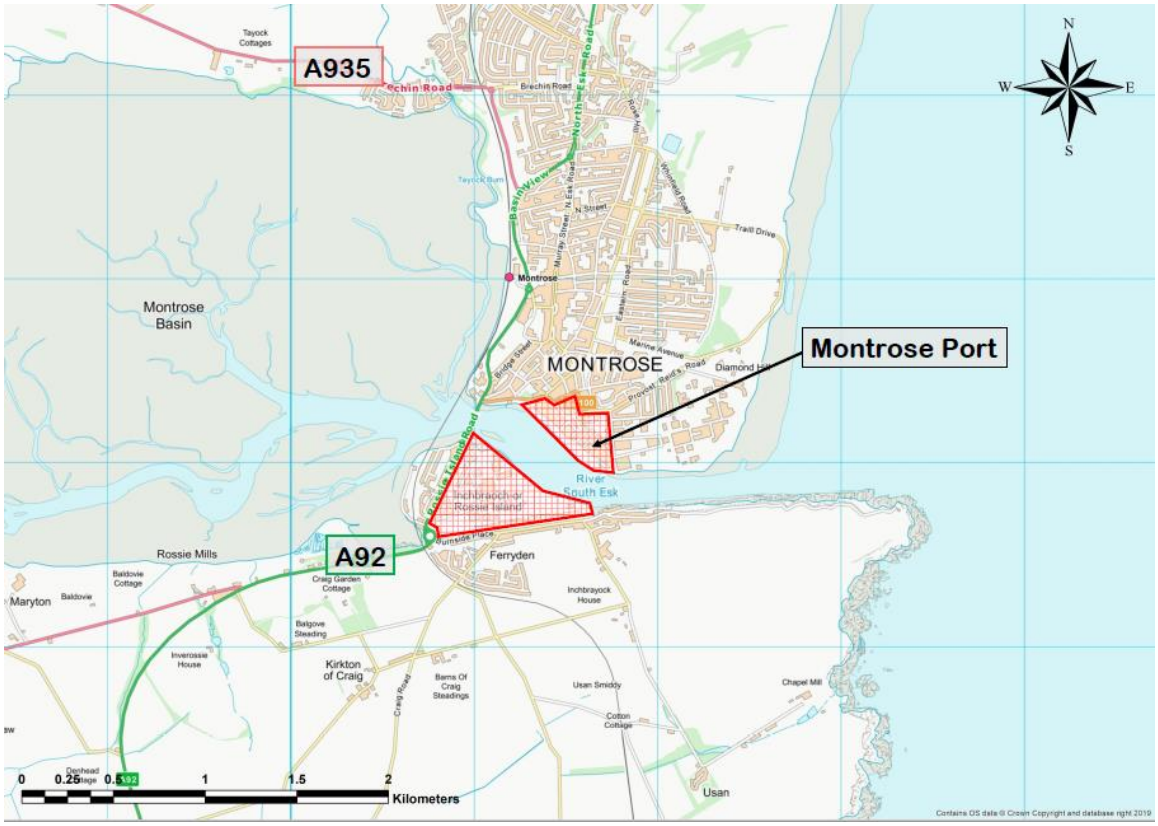

Figure 4-3: Montrose Port Location Plan

43. Montrose is served by the A92, A935 and the A937 roads and is well linked to the Scottish trunk road network. Like Eyemouth, Montrose could be used to facilitate crew transfers to a variety of offshore construction and support vessels, minor transfer of supplies, fuel and waste, and to support the Project Marine Coordination Centre.

4.3.4 Port of Leith

44. The port is situated within the Albert Dock area of Leith to the north of Edinburgh and is served by the A901 and A199 roads from the west and east respectively.

45. A location plan of the Port of Leith can be seen in Figure 4-4 below.

46. The Port of Leith could be used to facilitate crew transfers to a variety of offshore construction and support vessels, minor transfer of supplies, fuel and waste, and to support the Project Marine Coordination Centre.

Figure 4-4: Port of Leith Location Plan

4.3.5 Aberdeen Airport

47. Aberdeen Airport may be utilised during construction to facilitate helicopter crew transfer to and from the offshore installation vessels during pile and jacket installation.

48. Aberdeen Airport is situated in the Dyce area of the city to the north-west of the city centre and is served by the A96 and A947 roads in the immediate vicinity. The recently opened Aberdeen Wester Peripheral Route (AWPR) also routes past the airport and links to the A96 via the signal-controlled Craibstone Roundabout at the southern end of the airport.

49. Aberdeen Airport is a long-established heliport serving the North Sea oil and gas fields. The transfer of crew to the Wind Farm Area would be a routine activity from the airport where significant capacity exists for helicopter movements.

50. A location plan of Aberdeen Airport can be seen in Figure 4-5 below.

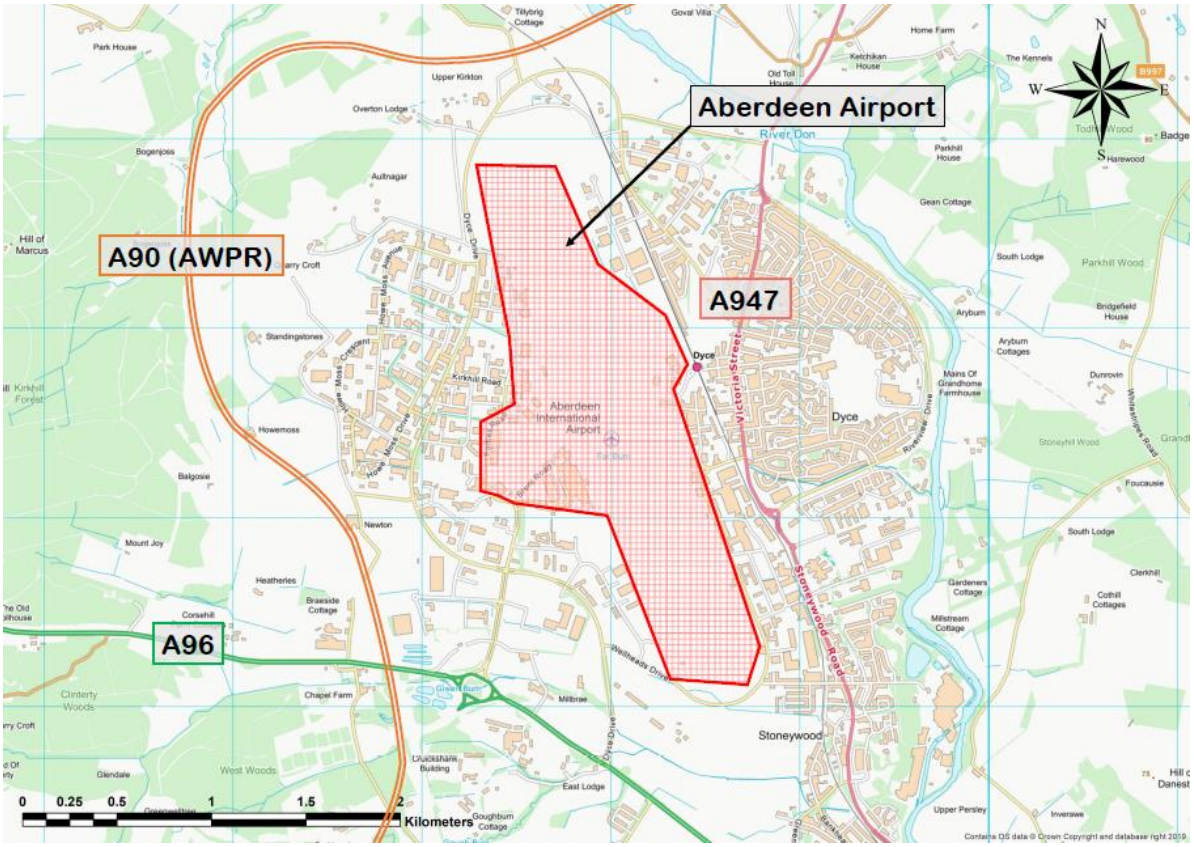

Figure 4-5: Aberdeen Airport Location Plan

4.3.6 Methil Fabrication Yard

51. Methil Fabrication Yard is located in the south of Methil on the southern Fife coast and may be utilised to support jacket fabrication and possibly require crane movements similar to that proposed at Dundee.

52. The fabrication yard is served by the A955 and B930 roads in the immediate vicinity. A location plan of the fabrication yard can be seen below in Figure 4-6.

Figure 4-6: Methil Fabrication Yard Location Plan

4.3.7 Port of Nigg

53. Port of Nigg is located approximately 1.5km southwest of the village of Nigg on the Cromarty Firth in the Scottish Highlands. The port may be utilised in a similar way to Dundee for the laydown and pre-assembly of Project components.

54. The main traffic movements generated by activity at Port of Nigg would be associated with the workforce undertaking component pre-assembly works and possibly crew transfers to and from offshore construction vessels. A smaller number of trips would be associated with the delivery of supplies and plant and transport of vessel waste away from the port.

55. The port is served by the B9175 road in the immediate vicinity, and by the A9 dual-carriageway approximately 9km north of the port by road. A location plan of the Port of Nigg can be seen below in Figure 4-7.

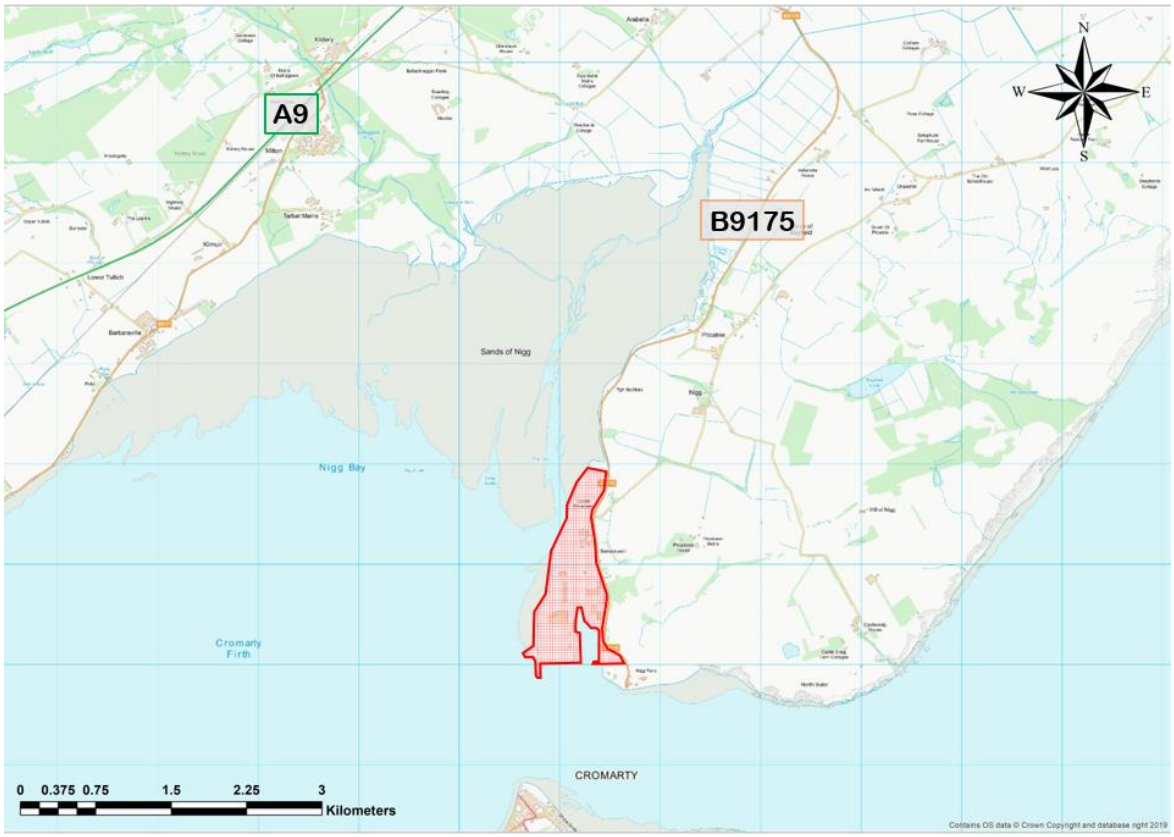

Figure 4-7: Port of Nigg Location Plan

4.4 Activities and Vehicle Movements

4.4.1 Delivery of Major Components

56. It is not anticipated that any abnormal load deliveries associated with the major components for the Project will be transported by road; all will be delivered by marine vessels either directly from the site of fabrication to the offshore installation area, or via the assembly/marshalling port at Dundee.

57. The delivery of the components below will not use any part of the UK local or strategic road network. All wind turbine components will be delivered by sea to Dundee for laydown prior to assembly and installation. Piles, jackets, OSPs and all subsea cables will be delivered directly to the offshore installation area by sea.

58. There will be road traffic movements arising from the pre-assembly and installation of these components as set out below. These are principally around movement of staff, supplies and waste.

4.4.2 Movement of Staff

59. The process of installation and commissioning of the Project will require the transport of technicians and vessel crews offshore using Crew Transfer Vessels (CTVs) or helicopters. CTVs will for the most part operate between ports on the east coast of Scotland and the offshore installation area. To a lesser extent, crew may also be transferred offshore from Aberdeen Airport by helicopter.

4.4.3 Transportation of Supplies

60. Supplies needed during construction include fuel, food, potable water, welfare and medical supplies, installation equipment and tools. These items will largely be transported by road to the ports by vans or HGVs, and then by sea to the offshore installation area using transport barges, CTVs or general workboats.

61. Vessels may visit a number of ports for refuelling during the construction phase. However, the fuel is likely to be obtained directly from the facilities available at the ports and so there is unlikely to be any increased direct road traffic associated with the delivery of fuel to the ports as a result of the Project.

4.4.4 Transportation of Waste

62. Waste generated from the Project will include a range of materials, but the principal constituents comprise wood from pallets and frames, metal, general and other such waste. Waste generated during construction will be delivered by marine vessels from the Project to ports where it will be handled by a certified and registered waste carrier. Any waste brought onshore will be transported by HGV from the port to a waste recycling facility as part of standard port waste disposal activities.

4.5 Summary of Road Traffic Movements

63. It is not anticipated that any abnormal load deliveries associated with the Project will be transported by road other than the delivery of plant and pre-assembly cranes, which will be stripped down and delivered to port as a series of HGV movements.

64. The only HGV movements on the road network are likely to be associated with the transfer of supplies to the ports and waste from the ports. Wastes would be transported to licensed waste management facilities for recycling.

65. The transport of staff and some supplies will generate traffic movements on the road networks around the identified ports that may be used as part of the Project. Such traffic will likely be from cars, vans and other light goods vehicles.

5 Construction Road Traffic

5.1 Baseline Traffic Flow Data

66. The following baseline traffic data has been collected for trunk roads in the vicinity of the ports and airports detailed in Section 1.4 and has been used to inform the potential traffic impacts arising from construction of the Development. As detailed in the methodology described in Section 1.4, the traffic flow figures in Table 5-1 have been extrapolated to 2020 to account for traffic growth over time.

Table 5-1: Annual Average Daily Flow

DFT COUNTER	COUNT YEAR	LOCATION	NRTF FACTOR	AADF (2020)		
				TOTAL	HGVS	% HGVS
Port of Dundee						
40858	2016	A92, East Dock Street – North of Port Coordinates: E341000, N730600	1.033	24,753	570	2%
20857	2017	A92, East Dock Street – Northwest of Port Coordinates: E340700, N730400	1.024	33,221	985	3%
Eyemouth Harbour						
80192	2017	A1 at B6355 Underpass Coordinates: E393000, N661650	1.024	8,184	1,155	14%
80395	Estimated 2018	A1107 chainage 600-700 Coordinates: E393960, N662000	1.016	4,911	128	3%
Aberdeen Airport						
40780	2017	A96 at AWPR Underpass Coordinates: E386800, N811210	1.024	11,910	565	5%
10990	Estimated 2017	A947, Stoneywood Road – East of Airport Coordinates: E389010, N811700	1.024	19,028	865	5%
Montrose Port						
20855	Estimated 2018	A92 – South of bridge over South Esk River Coordinates: E370900 N757000	1.016	10,850	488	4%
Port of Nigg						
40721	Estimated 2018	A9 – between junctions with B817 & B9175 Coordinates: E278000 N876110	1.016	8,767	684	8%
10722	Estimated 2018	A9 – between junctions with B9175 & B9165 Coordinates: E279300 N878000	1.016	8,761	592	7%

5.2 Port of Dundee

67. Wind turbine components may be delivered by sea to Dundee for laydown and assembly.

68. Under this scenario there would be approximately 120 two-way CTV journeys between the Port of Dundee and the offshore installation area over the 6-month turbine installation period, assuming two journeys each way carrying crew members once every two weeks. Each vessel is likely to carry up to 24 crew members, with three vessels sufficient to transfer the approximate 60 crew members to / from the offshore installation area every two weeks (not at the same time). This equates to a maximum of 60 two-way vehicle trips on the worst-case day (which occurs twice in a two-week period, or an average of once per week). Overall, this equates to a maximum of 0.24% impact against Annual Average Daily Flow which is significantly below the 30% threshold stipulated by IEMA Guidance. There is therefore no requirement for any mitigation measures to be implemented for such low levels of flow increase.

69. With regards to the onshore pre-assembly team, there are likely to be approximately 50-60 staff per shift, equating to a maximum of 120 two-way movements per day. This represents a robust assessment and assumes that all staff will travel to / from Port of Dundee either by car or LGV and makes no account for shared trips between staff members. In reality, a temporary workforce such as that proposed would likely be transported on a daily basis using works minibuses from overnight accommodation facilities.

70. In terms of the delivery of plant and pre-assembly cranes, the assembly crane would be stripped down and delivered to Dundee as a series of HGV movements. The main crane would constitute an abnormal load on the basis of weight alone and as such no changes are required to street furniture as there will be no over-run or over-sail beyond the carriageway edge. It is likely that a maximum of one delivery would occur per week on average (0.4 two-way movements per day). This represents an increase of 0.07%% of HGV traffic on the local Trunk Roads and would therefore not call for any mitigation. For the delivery of minor supplies, fuel and waste disposal, it is likely that around one delivery per day would occur, equating to 2 two-way movements on average. Again, this would not require mitigation at around a 0.35% increase in HGV traffic on local Trunk Roads. Such increases in traffic levels are well within daily variation limits.

5.3 Eyemouth Harbour

71. Eyemouth Harbour may principally facilitate the transfer of client representatives to a variety of vessels and to the offshore installation area. The harbour could also facilitate emergency response and ad-hoc visits. With regards to transfers, there are likely to be a much-reduced level of movements compared with those described above for the Port of Dundee.

72. Eyemouth may also facilitate the Marine Coordination Centre (a small team of several people that would be based onshore at Eyemouth Port); the operation of which would generate up to 10 two-way vehicle movements on the road network surrounding the harbour per day.

73. In comparing this to baseline traffic on the A1107, the maximum impact estimated from DfT counters is 0.31% which is again significantly below the 30% threshold for detailed assessment and consideration of mitigation.

5.4 Aberdeen Airport

74. As described in Section 4.4, Aberdeen Airport would be used solely for the transfer of crew to the offshore installation area by helicopter. In an absolute worst-case scenario, it has been assumed that the airport could operate up to a maximum of 20 two-way flights per week (10 return journeys i.e. 2 per day) and that this could generate up to around 20 additional two-way vehicle trips onto the network. This accounts for 2 pilots and up to 8 crew per flight travelling one way only.

75. Aberdeen Airport could be used for around 18-months during the construction phase, however, some periods will see higher activity than others. In cognisance of this, the worst-case week for journeys impacting the road network associated with the operations out of Aberdeen Airport have been adopted in the assessment (as opposed to average daily movements). Despite this, the maximum impact on the road network surrounding the airport will be around 0.17% which would be imperceptible on the surrounding road network.

5.5 Montrose Port

76. Montrose Port would be utilised in the same way as described for Eyemouth. The port would therefore facilitate the same level of operations as Eyemouth and has been assessed on this basis.

77. The worst-case daily movements will therefore also be associated with the transfer of crews at approximately 24 two-way movements per day. This equates to a 0.22% impact, requiring no further mitigation.

5.6 Leith

78. The Port of Leith could be used on an occasional, ad hoc basis for transfers of crews and supplies. As such the associated traffic levels are considered to be temporary in nature and negligible in terms of the impact on the local and strategic road network. No further assessment of flow levels or impacts has been undertaken.

5.7 Methil Fabrication Yard

79. Methil Fabrication Yard may be utilised for a portion of jacket fabrication activities. There is also the potential for some minor staff/supplies movements and a crane movement similar to those outlined for Dundee.

80. As a robust assessment, the average daily movements for any plant and equipment deliveries and transfer of supplies will be assumed to be equivalent to those identified at Port of Dundee. An absolute maximum of one delivery would therefore occur per week on average (0.4 two-way movements per day). This represents a negligible impact on the surrounding road network and no further assessment of flow impacts has been undertaken.

5.8 Port of Nigg

81. Nigg could be used in a similar way to that described for thePort of Dundee. Therefore, to allow robust assessment, it has been assumed that the operations and potential trip generation will be equivalent to those identified at Port of Dundee as described within Section 5.2.

5.9 Summary of Construction-Related Traffic Effects

82. Table 5-2 below summarises the average daily vehicle movements anticipated against the estimated 2020 AADF.

Table 5-2: Construction Vehicle Movements Impact

ACTIVITY		DURATION	AVERAGE DAILY MOVEMENTS		BASELINE TRAFFIC FLOW (2020)		% INCREASE FROM BASELINE	
			HGV	LGV	HGV	TOTAL	HGV	TOTAL
PORT	**Dundee**							
Turbine Pre-assembly	Plant Deliveries including pre-assembly cranes	7 months	0.4		570	24,753	0.07%	
					985	33,221	0.04%	
	Crew changeovers from offshore installation vessel	7 months (every 2 weeks)		60	570	24,753		0.24%
					985	33,221		0.18%
	Movement of onshore assembly team (50-60 staff per shift)	7 months		120	570	24,753		0.48%
					985	33,221		0.36%
	Minor transfer of supplies, fuel and waste	14 months	2		570	24,753	0.35%	
					985	33,221	0.20%	
	Ad-hoc visitors	14 months		4	570	24,753		0.02%
					985	33,221		0.01%
Export Cable Installation	Crew transfer for cable termination on OSPs	1 month		60	570	24,753		0.24%
					985	33,221		0.18%
	Crew changeovers from walk to work vessel	6 months (every 2 weeks)		60	570	24,753		0.24%
					985	33,221		0.18%
	Equipment deliveries (excluding abnormal loads)	6 months	0.5		570	24,753	0.09%	
					985	33,221	0.05%	
PORT	**Eyemouth**							
	Minor transfer of supplies, fuel and waste	2 years	0.4		1,155	8,184	0.03%	
					128	4,911	0.31%	
	Movement of Marine Coordination team	2 years		10	1,155	8,184		0.12%
					128	4,911		0.20%
	Ad-hoc visitors	2 years		4	1,155	8,184		0.05%
					128	4,911		0.08%
AIRPORT	**Aberdeen**							
		18 months		20	565	11,910		0.17%

ACTIVITY		DURATION	AVERAGE DAILY MOVEMENTS		BASELINE TRAFFIC FLOW (2020)		% INCREASE FROM BASELINE	
			HGV	LGV	HGV	TOTAL	HGV	TOTAL
Crew Transfer	Crew transfers for pile ops / jacket installation				865	19,028		0.11%
PORT	**Montrose**							
	Crew transfer to vessels as required	2 years		24	488	10,850		0.22%
PORT	**Port of Nigg**							
Component laydown and assembly as per Dundee	Plant Deliveries including pre-assembly cranes	7 months	0.4		684	8,767	0.06%	
					592	8,761	0.07%	
	Crew changeovers from offshore installation vessel	7 months (every 2 weeks)		60	684	8,767		0.68%
					592	8,761		0.68%
	Movement of onshore assembly team (50-60 staff per shift)	7 months		120	684	8,767		1.37%
					592	8,761		1.37%
	Minor transfer of supplies, fuel and waste	14 months	2		684	8,767	0.29%	
					592	8,761	0.34%	
	Ad-hoc visitors	14 months		4	684	8,767		0.05%
					592	8,761		0.05%

83. No major components would be delivered via the road network as abnormal loads during the construction phase. All such components will be delivered by sea transport to the ports and harbours. The only anticipated abnormal load is the crane used to support turbine pre-assembly, which would be stripped down and delivered to port as a series of one-off HGV movements. The main crane will constitute an abnormal load on the basis of weight alone and as such no changes are required to street furniture as there will be no over-run or over-sail beyond the carriageway edge. An application for the movement of the abnormal load will be made to Transport Scotland in consultation with the relevant route manager and the Police.

84. The construction phase of the Project will result in a short term and temporary increase in traffic movements, including cars, vans and HGVs to and from the named ports and Aberdeen Airport. Other ports may be used to support Project construction, though this would be on an ad-hoc and infrequent basis; for example, where used, guard vessels are typically fishing vessels and could be sourced from any north / east coast fishing ports or harbours, but crew numbers would be low and associated vehicle numbers would be negligible.

85. The increase in overall traffic volumes for construction traffic movements, particularly HGVs, is considered to be not significant in terms of the DfT and IEMA guidance. The road traffic generated by the Project during the construction phase will not generate more than 30 HGV movements per hour and will not result in a 30% increase to baseline numbers; this conclusion applies to all ports and airports named in the document.

86. No further mitigation is therefore required for the anticipated road-based traffic and transportation associated with the construction of the Wind Farm and OfTW.

6 Compliance with the Application

87. Onshore traffic effects were not required to be assessed in the Application.

88. There are no mitigation commitments relevant to traffic management in the Application.

7 References

Department for Transport (DfT, 2007) Guidance on Transport Assessment Available Online At: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263054/guidance-transportassessment.

Transport Scotland (TS, 2012) Transport Assessment Guidance available online at: https://www.transport.gov.scot/media/4589/planning_reform_-_dpmtag_-_development_management__dpmtag_ref__17__-_transport_assessment_guidance_final_-_june_2012.pdf

Institute of Highways and Transportation (IHT, 1998) Guidelines for Traffic Impact Assessment

Institute of Environmental Assessment (IEA,1993) Guidelines for the Environmental Assessment of Road Traffic