

Dogger Bank C/Sofia Onshore Works Application

Appendix 7 - Transport and Access Assessment

LEFT INTENTIONALLY BLANK

Table of Contents

1	Introduction	4
2	Policy and Guidance.....	6
3	Methodology.....	7
4	Existing Baseline	13
5	Definition of the Development Scenario.....	16
6	Construction – Assessment of Impact during the Works.....	17
7	Interrelationships.....	21
8	Cumulative impact assessment	22
9	Summary and Statement of Change/ No Change	23

Table of tables

Table 3.1: Traffic and Access Assessment Framework	8
Table 3.2: Link Sensitivity Receptors.....	9
Table 3.3: Links to be Assessed	11
Table 4.1: Base Traffic Flow Data for Links to be Assessed	14
Table 4.2: Review of Accident Clusters	14
Table 5.1: Scenario for the Assessment of Traffic and Access Impacts.....	16
Table 6.1: Existing and Proposed Daily Traffic Flows for Dogger Bank C and Sofia Offshore wind farms	18
Table 6.2: Existing and Proposed Daily Traffic Previous Study vs 2020 figures	18
Table 6.3: Access Detail and Mitigation Strategy	20
Table 7.1: Interrelationships Relevant to the Traffic and Access Assessment	21
Table 9.1: Summary of Impact Change at Access Point Changes	23
Table 9.2: Traffic and Access Impact Summary	23

1 Introduction

1.1 Purpose of the Document

This Assessment accompanies the Environmental Appraisal which is submitted to support the planning application made by Doggerbank Offshore Wind Farm Project 3 Projco Limited (the Projco) and Sofia Offshore Wind Farm Limited (SOWFL) (the Applicants), for consent pursuant to Section 62 of the Town and Country Planning Act 1990 as amended (the Application).

A Development Consent Order (2015 DCO) was granted for Dogger Bank Wind Farm C (previously known as Dogger Bank Teesside A Offshore Wind Farm) and Sofia Offshore Wind Farm (previously known as Dogger Bank Teesside B Offshore Wind Farm) (the Applicants' Projects), including the onshore transmission works required to export electricity to the grid in August 2015.

The Application includes five areas of alternative and additional infrastructure to the consented 9 kilometres (km) underground onshore grid connection, spanning from the landfall for Dogger Bank Wind Farm C (DB-C) and Sofia Offshore Wind Farm (Sofia) to the National Grid at Lackenby Substation (the Works). Figures 1.2 (a – c) of the Environmental Appraisal show the location of the Works and the consented 2015 DCO.

This Assessment determines the potential impacts of the Works set against the potential impacts of these as consented. Where the potential for impacts on transport are identified over and above those identified in the 2014 ES, mitigation measures and residual impacts are presented (only where additional to the Order Limits).

This Assessment considers the potential impacts of the Applicants' Projects during the construction stage. It then goes on to demonstrate that the anticipated impact of the works proposed is expected to be less than that granted through the 2015 DCO.

1.2 Development Context

For the ease of reference, the Works, as shown in Figure 1.2 (a – c) of the Environmental Appraisal, are split into areas as below:

- Area 1 – A174 Crossing;
- Area 2 – South of Kirkleatham Memorial Park;
- Area 3 - Wilton East;
- Area 4 - Main Welfare Hub south of Wilton; and
- Area 5 - HVAC Cable Corridor.

The 2014 ES was supported by a Transport Assessment (2014 TA) this was an appendix (Appendix A to Chapter 28 of the 2014 ES) that looked at Traffic and Access, primarily focusing on the transport impact of the construction phase of the Applicants' Projects. The document references are:

- ES – Chapter 28 F-ONL-CH-028_Issue 4.1; and
- 2014 TA - 9W7904.20/R00001/303838/PBor.

In line with the 2014 ES, the Assessment firstly only considers the land-based facilities for servicing the onshore construction and operation associated with the Applicants' Projects. Secondly, it only looks at the areas of material change from the 2015 DCO.

Transport and Access Assessment

This Assessment is underpinned by the supporting TA, contained in Annex B. The TA contains the detailed access strategy, derivation and distribution of the traffic demand and highway operation assessments of the Works, and compares traffic to the 2014 ES.

The outputs and conclusions from the TA have informed this assessment which contains a number of references to the technical work carried out as part of the TA.

1.3 Document Structure

This Assessment will follow the following structure:

- Section 2 includes an appraisal of relevant national and local policy;
- Section 3 describes the methodology for the appraisal;
- Section 4 describes the existing environment and network;
- Section 5 defines the worst-case scenario to be assessed;
- Section 6 sets out the assessment during the construction stage of the works;
- Section 7 considers interrelationships between other Appendices and traffic
- Section 8 assesses whether there are cumulative impacts with other significant projects; and,
- Section 9 provides a summary and conclusions.

The Assessment is accompanied by the following Annexes and Figures:

- Annex A Figures;
 - Figure 4.1 Local and wider highway network;
- Annex B Transport Assessment; and
- Annex C Personal Injury Collision Reports.

Transport and Access Assessment

2 Policy and Guidance

2.1 General

This section provides a high-level summary of relevant national and local transport policies considered; greater detail is discussed in the TA. Since the 2015 DCO was consented policy has evolved.

2.2 National Policy – National Planning Policy Framework (NPPF)

NPPF¹ is published by the Ministry for Communities and Local Government, along with thematic Planning Practice Guidance (PPG) to set the framework under which local transport, parking and accessibility plans and policies are set. The NPPF was revised in July 2018, with a further minor revision in February 2019.

2.3 Local Policy – Redcar and Cleveland, Local Transport Plan, 2011 – 2021, March 2011

The Redcar and Cleveland third Local Transport Plan² (LTP3) was adopted by RCBC in March 2011 and builds upon the Core Strategy and the Local Economic Partnership (LEP) Statement of Ambition by setting five main goals for city and regional networks, namely:

- Reduce Carbon Emissions;
- Support Economic Growth;
- Promote Quality or Opportunity;
- Contribute to better Safety, Security and Health; and
- Improve Quality of Life and Healthy Natural Environment.

The 2014 ES acknowledged these five key policies through the development of a Construction Traffic and Access Strategy that contains embedded traffic management measures to mitigate the traffic impact associated with the Applicants' Projects. This was also reflected in 2015 DCO Requirements that require discharge, it is anticipated that this Application will similarly mirror the consent granted.

2.4 Redcar and Cleveland Local Plan, May 2018

The Redcar & Cleveland Local Plan³ (the Local Plan) sets out the vision and overall development strategy for the RCBC's area and how it will be achieved for the period until 2032.

2.5 Summary

In general, the national, regional and local policies set out above promote common aims in respect of reducing car trips and encouraging travel by sustainable modes such as public transport, walking and cycling.

¹ UK Government (2019) NPPF [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

² <https://www.redcar-cleveland.gov.uk/resident/roads-and-travel/Pages/Local-Transport-Plan.aspx> (Accessed 11/06/2020)

³ RCBC (2018) Redcar and Cleveland Local Plan [Online] Available at: <https://www.redcar-cleveland.gov.uk/resident/planning-and-building/strategic%20planning/Pages/local-plan.aspx> (Accessed 11/06/2020)

The following sections demonstrate that the Works promoted through this Application continues to show that the Applicants' Projects are well located and are therefore considered to be in line with the national, regional and local policy aims.

3 Methodology

3.1 Introduction

The approach to this Assessment follows the previous work undertaken for the 2014 ES. The traffic and access impacts of the Works are assessed against the baseline environment set out below in Section 4.

Whilst the Works are not EIA development, this assessment has been undertaken in accordance with the EIA Regulations 2017⁴ and its related guidance⁵.

The scope and methodology of the assessment of impact has been the subject of consultation with the Redcar and Cleveland Borough Council (Highways) and also Highways England. Details of this consultation are set out in the Environmental Appraisal.

Table 3.1 shows the triggers previously agreed for baseline purposes in the 2014 ES. This was derived from:

- Guidance on Transport Assessments – Department for Transport March 2007⁶, which whilst withdrawn has largely not been replaced; and
- Guidelines for the Environmental Assessment of Road Traffic⁷ (published by the former Institute of Environmental Assessment), 1993 (GEART).
- Regard has also been given to Design Manual for Roads and Bridges LA101-120 (2019/2020)⁸

Table 3.1: Traffic and Access Assessment Framework

Effect	Magnitude of Effect			
	Negligible	Low	Medium	High/very high
Severance	Change in total traffic flow of less than 30%	Change in total traffic flow of 30 - 60% Rights of way crossing up to 4000 vehicles per day	Change in total traffic flow of 60 - 90% Rights of way crossing up to 4000 - 8000 vehicles per day	Change in total traffic flow of over 90% Rights of way crossing over 8000 vehicles per day
Pedestrian amenity	Change in traffic flow (or HGV component) less than 100%			Change in traffic flow (or HGV component) greater than 100%, having regard to the quantum of vehicles, speed and pedestrian footfall

⁴ Government Regulations can be view online at:
<http://www.legislation.gov.uk/uksi/2017/571/contents/made>

⁵ Government Regulations can be view online at:
<https://www.gov.uk/guidance/environmental-impact-assessment>

⁶ Guidance from Government available on line (note now withdrawn, but largely not replaced)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/263054/guidance-transport-assessment.pdf

⁷ Institute Guidance available online
<http://programmeofficers.co.uk/Cuadrilla2018/CD8/CD8.3.pdf>

⁸ Highways England Standards available online at:
<https://www.standardsforhighways.co.uk/dmr/>

Road safety	Informed by an assessment of collision rates at junctions based upon existing records and forecast increase in traffic
Driver delay	Informed through projected traffic increase on highway links and a review of network capacity

3.2 Review of Sensitivity Receptors

This section considers whether there are any material changes in the original 2014 ES that need to be considered, for example due to new development and the amendments proposed through this application. The focus on the 2014 ES was on the construction stage.

During the operational phase of the Applicants' Projects, traffic movements will be limited to that generated by the daily operation and periodic maintenance of the Onshore Converter Station (OCS).

A decommissioning plan for the Projects is secured by the 2015 DCO through the DCO Requirements and a decommissioning plan for the Works can be similarly secured by appropriate planning conditions.

At the decommissioning stage traffic volumes are materially lower than the construction stage because the cable system, ducting and tiles etc. will be left in situ. There will be no Horizontal Directional Drilling or trenching works. The decommissioning of the Projects will be around removal of the OCS's, potentially the cable and remaining access point(s). However, most of the construction related compounds and access points will already have been removed after cable laying and commissioning.

Prior to decommissioning, a further traffic assessment will be carried out and traffic management procedures agreed with the appropriate highways' authorities. However, the levels of traffic associated with decommissioning are likely to be lower than those required during construction as elements of the proposed project may be left in situ or recycled on site subject to the details presented in a Decommissioning Plan.

It is therefore predicted that the traffic impacts are likely to be similar to those presented during the construction phase scenarios.

In line with the approach in the 2014 ES, operation and decommissioning will generate less trips and are scoped out of this assessment.

Table 3.2 reviews the sensitivity of each road link during the construction stage and identifies whether there is any change to the sensitivity assigned to each link in the 2014 ES, as a result of this Application or due to a material change locally.

Table 3.2: Link Sensitivity Receptors

Link	Description	Link sensitivity	Rationale for Link Sensitivity (Construction Stage)
AA	A1085 Trunk Road	Low No change	Main A road designed to carry high volumes of traffic, no material change and no material change as a result of the Works.
BB	A1053 (Tees Dock Rd)	Low No change	Main A road designed to carry high volumes of traffic, no material change and no material change as a result of the Works.
CC	A1053 (Greystone Rd)	Low No change	Main A road designed to carry high volumes of traffic, no material change and no material change as a result of the Works.
DD	B1380 (High St)	High No material change	The link is a main (B) road but has residential properties and a play area in close proximity to the road that could be susceptible

Transport and Access Assessment

			to increases in traffic flow. No material changes as a result of the Works.
EE	A174	Low Minor change	Main A road designed to carry high volumes of traffic, slight increase in traffic generated by forming compounds.
FF	A174 (south of Wilton)	Low Minor change	Main A road designed to carry high volumes of traffic, slight increase in traffic generated by forming compounds.
GG	A1042 (Kirkleatham Ln)	High No changes	Although Kirkleatham Lane is a main A road, to the north the link passes close to many high sensitive receptors such as a school, and residential properties and is therefore considered to be susceptible to increase in traffic. No material changes as a result of the Works.
HH	A174 (south of Redcar)	Low Minor change	Main A road designed to carry high volumes of traffic, slight increase in traffic generated by forming compounds.
II	B1269 (Fishponds Rd)	Medium No material change	The link is a main (B) road but has residential properties (at Yearby) that are linked by a footway to Redcar that could be susceptible to increase in traffic flow. The crematorium built since the original Approval, and the speed limit reduced. No material changes as a result of the Works.
JJ	Grewgrass Lane	Medium Minor increase	The link is of good standard with occasional frontage development which could be susceptible to increases in traffic. Since the Approval the speed limit has been reduced. The new access will marginally increase traffic volume.
KK	Redcar Rd	High No change	Redcar Road is a modern distributor road with controlled pedestrian crossing, however there is significant pedestrian footfall between the community to the south of Redcar Road and the amenities to the north that could be susceptible to increases in traffic. A new residential development has been constructed by Taylor Woodrow since the Approval. No material changes as a result of the Works.
LL	A1085 (Coast Rd)	High No change	Although Coast Road is a main A road the link passes close to many highly sensitive receptors such as a secondary school, shops, and residential properties and is therefore considered to be susceptible to increase in traffic. No material changes as a result of the Works.
MM	A174 (south of Marske)	Low No change	Main A road designed to carry high volumes of traffic, no material changes as a result of the Works.
NN	A174 (Redcar - Marske)	Low Minor change	Main A road designed to carry high volumes of traffic, slight increase in traffic generated by forming compounds and relocated access.

3.3 Assessment of Impacts

As described in the methodology, thresholds are considered in respect of changes in the volume and composition of traffic to facilitate a subjective judgement of traffic impact and significance. However, on links where no change is envisaged as a result of the Works, this has been scoped out of this assessment as it was assessed by the 2014 ES.

As well as the access points onto the public highway, there are three additional access points proposed with Wilton International providing connections between the Haul Road and the cable route. These access points are referenced as No 10J (2), (3) and (4). These access points do not directly connect to the public highway

Transport and Access Assessment

and do not materially alter vehicle movements to/from Wilton International's site. As a consequence, these access points are not considered further within this Assessment.

The links to be assessed further are set out in Table 3.3.

Table 3.3: Links to be Assessed in this Assessment

Link	Description	Link sensitivity	Rationale for assessment
EE	A174	Low Minor change	Increase in traffic generated by enlarged compounds
FF	A174 (south of Wilton)	Low Minor change	Increase in traffic generated by enlarged compounds to the east.
HH	A174 (south of Redcar)	Low Minor change	Increase in traffic generated by enlarged compounds
II	B1269 (Fishponds Rd)	Medium No material change	Minor increase in compound size CC D (2) and (3).
JJ	Grewgrass Lane	Medium Minor increase	The new access No 10E(2) will increase traffic volume.
NN	A174 (Redcar - Marske)	Low Minor change	Increase in traffic generated by enlarging compounds CC B and C, and relocation of access No 10C(a)

The following environmental effects have been identified as being susceptible to changes in traffic flow and are appropriate to the local area.

3.3.1 Severance

Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. It can also relate to quite minor traffic flows if they impede pedestrian access to essential facilities. Severance effects could equally be applied to residents, motorists or pedestrians.

3.3.2 Pedestrian amenity

Pedestrian amenity is broadly defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic. This definition also includes pedestrian fear and intimidation, and can be considered to be a much broader category including consideration of the exposure to noise and air pollution, and the overall relationship between pedestrians and traffic.

The 2014 TA considered a doubling of total traffic volume, or a doubling of the volume of Heavy Goods Vehicle (HGV) component, may lead to a negative impact upon pedestrian amenity.

3.3.3 Highway safety

The assessment of highway safety is based on professional judgement and whether or not any change in traffic flows (including HGV volume) will change the character of a road or junction and whether this will elevate or lessen the risk of accidents, e.g. junction conflicts.

As assessed in the 2014 ES, an examination of the existing collisions within the study area has been undertaken to identify any collision clusters with collision rates higher than local and national averages. These sites are considered to be sensitive to changes in traffic flows (sensitive receptors) and therefore more detailed analysis of local factors has been undertaken in the context of the proposals.

3.3.4 Driver delay

Guidance recommends the use of proprietary software packages to model junction delay and therefore, estimate increased vehicle delays. However, it is noted that vehicle delays are only likely to be significant when the surrounding highway network is at, or close to, capacity.

As previously agreed, and checked through re-consultation with the highway authorities, it has been established that junction modelling is not necessary based on the projects' traffic generation and distribution presented in Section 6 of this Assessment.

3.4 Summary

The stage of the Works requiring assessment is the construction stage, this generates more trips than during the operational and decommissioning stages. These latter two stages have been scoped out.

The impact of the new/altered accesses and compounds will only have a medium impact in two locations, the following Sections review the scale of impact.

Transport and Access Assessment

4 Existing Baseline

4.1 Introduction

The Works are located in Teesside and incorporates the towns Middlesbrough, Stockton-On-Tees, Thornaby, Billingham, Cleveland, Redcar and other smaller settlements near the River Tees.

Teesside is located on the east coast of the UK. Access to the wider SRN is predominantly via the A66 and A19 dual carriageways, which link to the A1(M). The A1(M) provides access to the key north / south corridor passing close to Newcastle upon Tyne and Leeds. The A1(M) also provides access to the M62 east-west strategic transport corridor.

Traffic from the Works travel on national and local roads, these are respectively managed by two highway authorities, HE and RCBC. HE is an executive agency of the Department for Transport (DfT) and is responsible for managing the Strategic Road Network (SRN) on behalf of the Secretary of State for Transport. RCBC is the Local Highway Authority (LHA) and is responsible for managing the local highway network within the Borough.

Figure 4.1, Annex A, depicts the local and wider highway network and provides a graphical reference for this Assessment. The 2014 ES considered the impact of the Applicants' Projects on the main link roads illustrated. This Assessment focuses on the localised changes on the following roads on the local highway network.

The baseline environment is defined from a site visit undertaken on 11th March 2020, traffic data derived from Department for Transport sources and originally undertaken to support the 2014 ES, and road collision data from the 5-year period ending December 2019.

The Local road network is defined in greater detail within the TA.

4.2 Traffic Flow Data

To assess the impact of the construction access and compound changes, this Assessment has adopted the approach used previously, and described in detail in the 2014 ES. This has been updated for the Works which are the subject of the Application. As agreed through the Scoping consultation undertaken for this Application, existing traffic flow data for all the key roads within the study area has been captured from a number of sources, this is defined in greater detail within the TA (See Paragraph 3.3).

Table 4.1 sets out the base traffic count data as Annual Average Daily Traffic (AADT) and HGV content. Before traffic associated with the Works is added. 2020 is used as the baseline because any increase, when expressed as a percentage, will be greater than a later year.

Table 4.1: Base Traffic Flow Data for Links to be Considered in this Assessment

Link	Description	2020 24hr AADT all vehicles	2020 24hr HGV flows
EE	A174	31,052	1,754
FF	A174 (south of Wilton)	43,340	1,090
HH	A174 (south of Redcar)	30,257	563
II	B1269 (Fishponds Rd)	6,773	169
JJ	Grewgrass Lane	4,290	13
NN	A174 (Redcar - Marske)	30,257	563

4.3 Traffic Collision Data Review

- 4.3.1 The TA also considers in greater detail road accident clusters comparing the position in the 2014 TA to the latest available data.

Table 4.2 below, compares the last five years accident data (to December 2019) to that considered in the 2014 TA. This shows that at all cluster sites, there had been a material reduction in accident numbers, suggesting that the risk to road users has reduced rather than increased.

Table 4.2: Review of Accident Clusters

Location	2014 ES assessment	Five year to Dec 2019	Change
Cluster 2: A174, A1085 and Marske Road	The junction has experienced ten collisions within five years. One resulted in serious and nine slight injuries.	Six accidents at or approaching the roundabout four serious two slight.	No change.
Cluster 4: A174, B1269 and Grewgrass Lane roundabout	The junction has experienced 12 collisions within five years all of which resulted in slight injury. Five of the collisions are clustered at the Redcar Lane arm of the roundabout, three on the A174 east, two on Grewgrass Lane and two on the A174 west.	Eight slight injury accidents. None on Grewgrass Lane. Six on Redcar Lane arm.	Reduced risk.
Cluster 5: B1269, Redcar Road and Plantation Road roundabout The junction has experienced	The junction has experienced eight collisions within five years all of which resulted in slight injury.	One slight accident.	No longer considered a cluster site (below four accidents at a roundabout).

Cluster 7: A1053, A174 and the B1380 roundabout	The junction has experienced 22 collisions in five years of which one resulted in a fatal injury and the remaining 21 resulted in slight injury. Of the 22 collisions, 20 of the collisions can be grouped into three types, namely: 11 involved a rear end shunt type collisions between two vehicles, five involved the loss of control of a vehicle and four involved the collision between two vehicles on the roundabout.	This junction has seen accidents reduce to ten in five years. Nine slight injury incidents and one serious	Reduce to High risk. But out of scope of this assessment.
Cluster 10: A1085, West Coatham Lane, Wilton Complex and the TATA steel works roundabout	The junction has experienced nine collisions within five years of which two resulted in serious injury and the remaining seven resulting in slight injury.	The accidents have reduced to four in five years two slight and two serious.	No change. But out of scope of this assessment.

4.3.2 Grewgrass Lane Access

There has been one slight injury collision close to the proposed additional access (access 10E (2)) from Grewgrass Lane. It took place on a Sunday in 2019 and involved a single car away from a junction. There were no other vehicles involved or reported highway defects or weather factors recorded. Details are included in Annex C.

4.3.3 A174 access point

There has been a single incident in 2017 in the vicinity of the access point approved by the 2015 DCO and close to the proposed east site relocated access (No 10C(2)). This involved two cars and a medium goods vehicle, and resulted in serious injury to one of the car drivers. The collision took place on a Sunday and appears to have been a shunt or overtaking incident. Details are included in Annex C.

5 Definition of the Development Scenario

In line with the 2014 ES, the onshore construction scenarios for the Applicants' Projects is based on the latest known plan. However, where information is not yet known or uncertain, a realistic worst-case scenario assumption has been tested.

Table 5.1 summarises the assumptions which underpin the realistic worst-case scenario, this builds on the scenario previously agreed.

Table 5.1: Scenario for the Assessment of Traffic and Access Impacts

Impact	Realistic worst case scenario	Justification
Construction	Construction duration of 36 months.	36 months is the minimum realistic duration the works can be completed now the designs are being developed and end user confirmed.
	Partial overlap of construction activities based on current programme during the peak construction period being assessed	Represents maximum intensity of activities and results in peak traffic generation.
	Peak National Grid traffic demand overlaps peak Dogger Bank C and Sofia Offshore Wind Farms traffic demand.	Represents peak 'in-combination' traffic generation.
	Enabling works will start in OCS/HVAC area in year 1. Earliest start of HVDC works is expected in year 2.	Year 2 is the earliest realistic construction start date for the assessment of the works with the greater traffic volumes and therefore environmental impact. "Year 0" base year is treated as 2020 traffic data as it would result in the greatest proportionate impact because background traffic demand across subsequent years will be subject to modest growth. This approach means that expressing traffic increase in terms of percentage increase will be assessed as more significant.
	No allowance for construction workers to be able to travel by non-car modes (bus, rail, walking and cycling) has been applied to the traffic demand.	Distributes construction employee travel to work by car only, resulting in a higher traffic demand for the purpose of a robust assessment.

6 Construction – Assessment of Impact during the Works

6.1 Overview

Aligned to the policy and guidance framework, 2014 ES and stakeholder engagement a 'Traffic and Access Strategy' has been developed. The Traffic and Access Strategy contains mitigation measures that have been secured by the Requirements in the 2015 DCO. These mitigation measures can be similarly secured for the Works through planning conditions. The following mitigation measures are promoted within the Traffic and Access Strategy and have been applied to the traffic forecasts contained in this Assessment:

- Access to the Works primarily from A or B roads, thereby minimising the impacts upon local communities and utilising the most suitable roads;
- Access routes located close to the main A and B roads to reduce the impact upon local communities;
- The use of a remote haul route to reduce trips upon the highway network to distribute materials as well as reducing the number of points of access on to the highway network;
- The use of a haul route from the Wilton International under the A1053 (via an underpass) to the existing NGET substation at Lackenby to reduce traffic movements upon the B1380 where possible;
- The two primary compounds (CC C and CC H) are located away from sensitive receptors to reduce the traffic impact upon local communities;
- The use of Horizontal Directional Drilling (HDD) for all (public highway) road and rail crossings to reduce the disruption to traffic from more conventional cut and cover techniques;
- The linear nature of the project will allow for the even distribution of activities and associated daily HGV demand; and
- The encouragement of car-sharing amongst construction staff at a minimum ratio of 2.5 employees to a vehicle to reduce LCV traffic.

6.2 Route Screening

In accordance with the above screening process, this Assessment has identified those areas linked to the Application where there is material change sufficient to revisit the 2014 ES conclusions.

In terms of traffic and access impacts, the focus remains on the construction stage of the Works. Only the localised impacts to the changes have been reviewed. Impacts on the wider road network were considered in the 2014 ES with the increased number of proposed construction compounds reducing the need to transport material off site.

Table 6.1 summarises the total daily peak movements of all materials, personnel and plant during the peak activity month, once the traffic is distributed across the highway network. Table 6.2 also provide a comparison of the peak construction flows with the forecast background traffic flows in 2020 (the Baseline).

Table 6.1: Existing and Proposed Daily Traffic Flows

Link	Link Description and link sensitivity	Traffic projections – this Application				2014 TA**	
		Construct-ion flows	Base Flow 2020 (AADT*)	Base 2020 + project flows	% increase (2020)	Construct-ion flows	% increase (2015)
EE	A174 Sensitivity Low	254	31,052	31,306	0.8%	372	1.4%
FF	A174 (south of Wilton) Sensitivity Low	482	43,340	43,822	1.1%	739	1.8%
HH	A174 (south of Redcar) Sensitivity Low	181	30,257	30,438	0.6%	253	0.9%
II	B1269 (Fishponds Rd) Sensitivity Medium	35	6,773	6,808	0.5%	64	1.1%
JJ	Grewgrass Lane Sensitivity Medium	13	4,290	4,303	0.3%	14	0.3%
NN	A174 (south of Redcar) Sensitivity Low	130	30,257	30,387	0.4%	173	0.6%
Notes		*AADT – Annual Average Daily Traffic flow; ** see Table 6.2 from 2014 TA					

To contextualise the above percentage changes they have been compare to that previously assessed for HGV's in the 2014 ES.

Table 6.2: Existing and Proposed Daily Traffic 2014 TA vs 2020 figures

Link	Description	Link sensitivity	2014 ES		2020 - this study	
			Increase all vehicles	Increase HGVs	Increase all vehicles	Increase HGVs
EE	A174	Low	1.4%	15.4%	0.8%	7.4%
FF	A174 (south of Wilton)	Low	1.8%	34.5%	1.1%	23.8%
HH	A174 (south of Redcar)	Low	0.9%	5.7%	0.6%	7.1%
II	B1269 (Fishponds Rd)	Medium	1.1%	18.8%	0.5%	9.5%
JJ	Grewgrass Lane	Medium	0.3%	64.1%	0.3%	46.2%
NN	A174 (Redcar - Marske)	Low	0.6%	2.1%	0.4%	2.1%

The figures in bold in Tables 6.1 and 6.2 show those links where the traffic flows are above the trigger levels. In all cases they relate to construction HGV traffic.

In line with guidance and the 2014 ES, those links showing greater than 10% increase in total traffic flows (or HGV component) for sensitive links or greater than 30% increase in total traffic or HGV component for all other links are considered when assessing the traffic impact upon receptors.

From the above screening only link 'JJ' (Grewgrass Lane) is above the threshold. This link was also identified in the 2014 ES. The remaining links all fall below the screening thresholds and are therefore, not considered further in this Assessment. This indicates the potential for a reduction in impact from the 2014 ES, which is

in part due to the extension of the construction programme for the Applicants' Projects, demonstrating that the 2014 ES represents the worst case.

6.3 Impacts

The following paragraphs summarise the construction traffic impacts on the effects identified as being susceptible to changes in flow for both the construction scenarios identified in Section 5 based on both the Applicants' Projects concurrently and sequentially.

The assessment of the materiality of impact is judged against the criteria set out in Table 3.1

6.3.1 Severance

The change in total traffic as a result of the Works, for both the Applicants' Projects in isolation and also the concurrent scenarios, for all links is less than the 30% change in traffic threshold and therefore the impact is assessed as negligible against this measure as a result of the Works regardless of whether the Projects are concurrent or sequential.

Considering the traffic volume crossing a public right of way, the construction traffic does not move the volume on any road between one band of impact to another, such that there would be a change in impact. Therefore there is no change against this measure as a result of the Works.

6.3.2 Pedestrian Amenity

The volume of HGV's using Grewgrass Lane is below 100% trigger level and therefore will have a negligible impact as a result of the Works. The predicted HGV's level using Grewgrass Lane will be 46.2%, showing a reduced impact than the 2014 ES predicted impact.

6.3.3 Highway Safety

Having identified the collision clusters (Section 4), these were reviewed further to see how clusters have changed since the 2014 ES using data up to December 2019, this is necessary to understand the current position and to understand significance of the changes proposed on road safety. In terms of the screening assessment, only one cluster remains material is Cluster 4: A174, B1269 and Grewgrass Lane roundabout.

Cluster 4 (Grewgrass Lane) is impacted by the screened construction traffic. The assessment has identified that the collisions occurring at this junction are either not statistically significant (A174 and Grewgrass Lane arms) or unlikely to be impacted by the level of traffic demand (Redcar Lane Arm). Furthermore, the accident record has improved with the five-year accident record dropping from 12 to eight in five years, with most remaining on the Redcar Lane Arm of the junction. Therefore, the magnitude of effect is assessed as negligible on a high value receptor resulting in a negligible impact.

For Cluster 4, the assessment has identified that the collisions occurring at this junction are either not statistically significant (A174 and Grewgrass Lane arms) or unlikely to be impacted by the level of traffic demand (Redcar Lane Arm). Therefore, the magnitude of effect is assessed as negligible on a high value receptor resulting in a negligible impact.

Transport and Access Assessment

The highway safety review also considered the access points proposed as part of the Works and identified that there is no emerging pattern of collisions at these locations.

Notwithstanding, it is recognised that whilst there may not be an existing collision problem, the increase in turning manoeuvres and slow-moving vehicles could lead to an increased risk of collisions. A package of embedded mitigation measures has been developed to reduce the risk to the travelling public and construction employees at these locations and is outlined in Table 5.4. With these measures in place, the magnitude of effect at points of access is assessed as low on low value receptors resulting in a negligible impact. This will apply whether the Projects are on-site concurrently or sequentially.

6.3.4 Access Mitigation Strategy

In line with the 2014 ES, it is considered prudent to manage the above risk of slow-moving traffic at the access points proposed as part of the Works. Table 6.3 summarises the controls to be put in place.

Table 6.3: Access Detail and Mitigation Strategy

Access point	Access Description	Mitigation Measures
Area 2 10E (2) – Grewgrass Lane	<p>A new access will be taken directly from Grewgrass Lane opposite the approved access.</p> <p>Both accesses will have appropriate geometry. Upon completion of the construction works, access 10E (2) will be removed.</p>	<p>The current speed limit is 40 mph and it is proposed to provide an advisory 30 mph speed limit in the vicinity of the site accesses throughout the duration of the works.</p> <p>The temporary speed limit will allow for the provision of reduced visibility splays recognising the temporary nature of the works and the environmental impact of removing large sections of mature hedge.</p> <p>Temporary direction and warnings signs to advise of turning vehicles will be provided in accordance with Chapter 8 of the Traffic Signs Manual.⁹</p>

6.3.5 Driver Delay

For the adopted project scenario, the peak change in total traffic for all links is less than the above threshold whereby, the increase in traffic as a result of the Works is likely to be indiscernible in the context of daily traffic fluctuations, which can vary by up to 10% across the year. Therefore, the magnitude of effect is assessed as negligible on all receptors resulting in a negligible impact.

⁹ Government published online at: <https://www.gov.uk/government/publications/traffic-signs-manual>

7 Interrelationships

It is normal to consider the interaction between the differing environmental impacts across the Works as a whole. This Section considers the inter-relationships between traffic and access and other receptors.

The objective is to identify where the accumulation of impacts on a single receptor, and the relationship between those impacts, may give rise to a need for additional mitigation.

Table 7.1 summarises the inter-relationships that were considered of relevance to traffic and access and identifies where they have been considered within the Environmental Appraisal. This mirrors the 2014 ES and has not changed as a consequence of this Application.

Table 7.1: Interrelationships Relevant to the Traffic and Access Assessment

Inter relationship	Technical Appendices where addressed	Linked Assessment
The relationship between increased traffic and effects on landscape.	Appendix 1	Landscape and Visual Assessment
The relationship between access impacts upon land use.	Appendix 5	Land use
The relationship between traffic delay and traffic noise upon local residents.	Appendix 8	Noise
The relationship between traffic delay and traffic related air quality upon local residents.	Appendix 9	Air Quality

8 Cumulative impact assessment

This Section considers the cumulative impact assessment for traffic and access, taking into consideration other plans, projects and activities.

The 2014 ES considered the traffic and access impact of 32 developments on the Applicants' Projects. Only three schemes were considered to have a material impact, these are:

- Land at the Marske Estate (LaME) comprises primarily of a residential development of up to 1,000 dwellings with the potential for complementary amenities including a convenience store, primary school, community hall and doctors/pharmacy being explored;
- The York Potash Project comprises a potash mine located approximately 2km south of Sneaton village in the North York Moors and a buried pipeline (approximately 43km long) from the mine to a processing facility within the Wilton International; and
- Screening opinion for a potash project.

As discussed in the Environmental Assessment In the consultation undertaken with RCBC for this Application, there are no applications that materially impact on this Application at this time, this is because the above sites are either complete or have not come forward. Therefore, there are no cumulative impacts to consider.

9 Summary and Statement of Change/ No Change

This Assessment should be read alongside the Environmental Appraisal has assessed the potential impact of the Works on traffic and access receptors. This Assessment has considered the effects of the Projects being delivered concurrently and sequentially.

This Assessment has been developed having due regard to the legislative and policy framework outlined in Section 2 and further informed by consultation with the two-highway authority's, RCBC and the Highways England.

This Assessment is underpinned by the supporting TA, which forms an appendix to this Assessment. The TA details the traffic generation, distribution and impact of vehicles, considers accessibility by sustainable transport modes and sets out the access strategy for the additional and altered accesses included within the Works.

The TA and this Assessment are also informed by the 2014 ES.

The mitigation set out in the Traffic and Access Strategy is secured in the 2015 DCO through the DCO Requirements for a Construction Traffic Management Plan and a Construction Travel Plan and can be similarly secured for the Works by appropriate planning conditions.

This Assessment sets out the baseline against which traffic and access impacts are considered. Against the baseline conditions, the study identifies sensitive receptors. The study then screened routes that could be potentially impacted by the traffic generation associated with the Works. A single route was identified as requiring a detailed impact assessment, namely; link JJ (Grewgrass Lane).

This Assessment identified no moderate or major adverse impact, with all impact being of either minor adverse or negligible levels as shown by Tables 9.1 and 9.2.

Table 9.1: Summary of Impact Change at Access Point Changes

Receptor	2014 ES Effect Significance	Effect Significance from this Application	Change/No Change
Area 1 Access 10C (2) A174 north of Gurney Street roundabout	0.9% increase in traffic flows (253 HGV's)	Impact reduced to 0.6% (181 HGV's)	No change assumed – although assessment predicts reduced impact
Area 2 Access 10E (2) Grewgrass Lane	0.3% increase in traffic flows (14 HGV's)	Impact reduced to 0.3% (13 HGV's)	No change

Table 9.2: Traffic and Access Impact Summary

Description of impact	Mitigation	Residual Impacts	
		Construction (all scenarios)	
Pedestrian Severance	N/a	Negligible	
Pedestrian amenity	N/a	Negligible	
Highway safety	N/a	Minor adverse	
Driver delay	N/a	Negligible	

Transport and Access Assessment

The potential for interrelationship impacts due to traffic borne noise and air quality effects has been identified and is discussed separately in other Appendices which accompany the Environmental Appraisal.

Consideration was given to the cumulative impact assessment was undertaken reviewing projects, activities and plans relevant to traffic and access.

This assessment demonstrates that the Works give rise to no new or materially different environmental effects than those identified within the 2014 ES and will not give rise to any new likely significant effects.

Transport and Access Statement – Annex A – Figures



DOGGER BANK WIND FARM

BY
sse Renewables equinor



Planning Application Boundary
DCO Limits

0 1 km @ A3

SCP

Produced By: LC Ref: 190608-ES-4.1

Checked By: DY Date 26/06/2020

Local and Wider Highway Network Figure 3.1

Dogger Bank C / Sofia Onshore Works
Application

Transport and Access Statement – Annex B – Transport Assessment

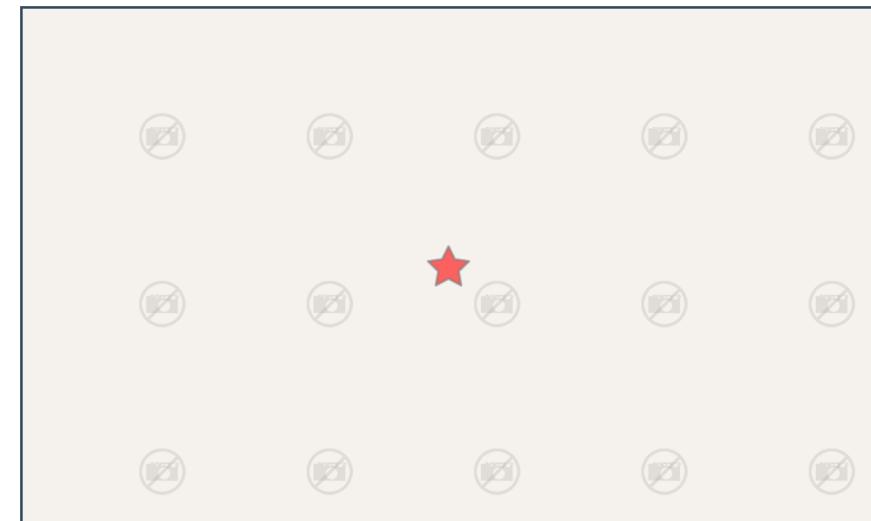
Transport and Access Statement – Annex C – Personal Injury Collision Reports



2019 data is provisional and is subject to change

Crash Date: Sunday, March 17, 2019 **Time of Crash:** 1:08:00 PM **Crash Reference:** 2019170L40239

Highest Injury Severity:	Slight	Road Number:	U0	Number of Casualties:	2
Highway Authority:	Redcar and Cleveland			Number of Vehicles:	1
Local Authority:	Redcar & Cleveland Borough			OS Grid Reference:	461079 521745
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	40				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Unknown				



For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



2019 data is provisional and is subject to change

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	-1	Female	25-34	Vehicle proceeding normally along the carriageway, not on a bend	Unknown	Other	None	Tree

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	25-34	Unknown or other	Unknown or other
1	2	Slight	Vehicle or pillion passenger	Female	45-54	Unknown or other	Unknown or other

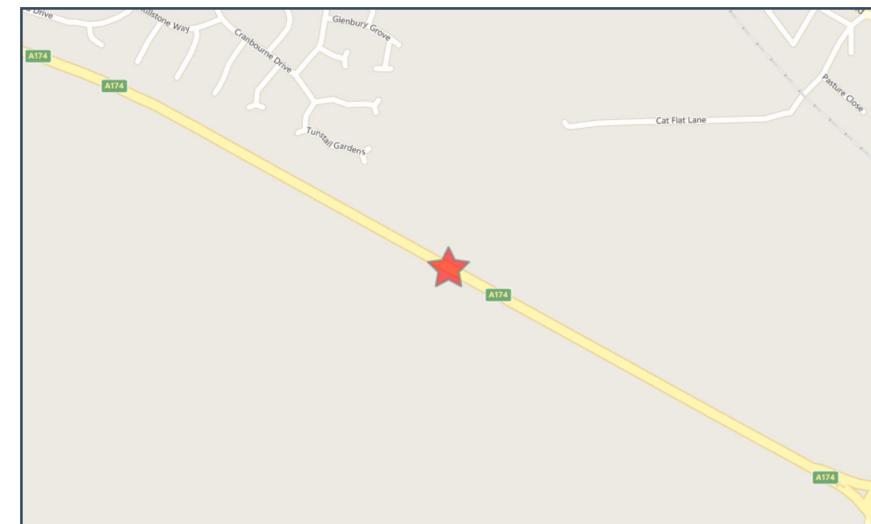
For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Crash Date: Sunday, June 04, 2017 **Time of Crash:** 11:30:00 AM **Crash Reference:** 2017170L30717

Highest Injury Severity:	Serious	Road Number:	A174	Number of Casualties:	1
Highway Authority:	Redcar and Cleveland			Number of Vehicles:	3
Local Authority:	Redcar & Cleveland Borough			OS Grid Reference:	461808 521985
Weather Description:	Fine without high winds				
Road Surface Description:	Dry				
Speed Limit:	60				
Light Conditions:	Daylight: regardless of presence of streetlights				
Carriageway Hazards:	None				
Junction Detail:	Not at or within 20 metres of junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Not Applicable				



For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services



Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
3	Car (excluding private hire)	10	Male	36 - 45	Vehicle proceeding normally along the carriageway, not on a bend	Front	Other	None	None
1	Goods vehicle 7.5 tonnes mgw and over	22	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Journey as part of work	None	None
2	Car (excluding private hire)	12	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Other	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
3	1	Serious	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

To subscribe to unlimited reports using CrashMap Pro visit www.crashmap.co.uk/Home/Premium_Services