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16. Traffic and Transport

16.1 Introduction

16.1.1 This chapter of the Environmental Statement (ES) addresses the potential effects of the Proposed Development on traffic and transport.

16.1.2 This chapter is supported by Figures 16-1 to 16-3 (ES Volume II, Document Ref. 6.3) and Appendices 16A: Transport Assessment (TA), 16B: Framework Construction Workers Travel Plan and 16C: Framework Construction Traffic Management Plan (ES Volume III, Document Ref. 6.4).

16.2 Legislation and Planning Policy Context

16.2.1 This section outlines the planning policy relating to traffic and transport. A full overview of all relevant planning policy is covered in Chapter 7: Legislative Context and Planning Policy (ES Volume I, Document Ref. 6.2), which also sets out the primacy of National Policy Statements (NPS) in decision-making on NSIP such as the Proposed Development.

National Planning Policy

National Policy Statement for Energy (NPS EN-1)

16.2.2 The National Policy Statement (NPS) (Department of Energy and Climate Change (DECC), 2011a) was published in 2011. Section 5.13 of the NPS outlines the planning policy for traffic and transport, including guidance on undertaking relevant parts of the EIA (which has been taken into account in producing the Preliminary Environmental Information (PEI) Report). The most relevant paragraphs for the transport assessment are 5.13.2 to 5.13.4 which state:

"5.13.2 The consideration and mitigation of transport impacts is an essential part of Government's wider policy objectives for sustainable development as set out in Section 2.2 of this NPS.

5.13.3 If a project is likely to have significant transport implications, the applicant's ES (see Section 4.2) should include a transport assessment, using the NATA/WebTAG139 methodology stipulated in Department for Transport guidance, or any successor to such methodology. Applicants should consult the Highways Agency and Highways Authorities as appropriate on the assessment and mitigation.

5.13.4 Where appropriate, the applicant should prepare a travel plan including demand management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts."

16.2.3 In terms of the Secretary of State's decision making, Section 5.13 of the NPS states that the Infrastructure Planning Commission (now the Secretary of State) should ensure that the Applicant has sought to mitigate the impacts on the surrounding road infrastructure that may occur as a result of a new energy

NSIP. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the Secretary of State should consider additional measures to mitigate the adverse impacts on transport networks arising from the development, which could include:

- demand management measures;
- water-borne or rail transport, where cost effective; and
- including relevant Requirements within the draft DCO where there is likely to be substantial HGV traffic.

National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (NPS EN-2)

16.2.4 Section 2.2 of NPS EN-2 (DECC, 2011b) outlines the planning policy for traffic and transport specifically in respect of fossil fuel generating stations such as the Proposed Development. The relevant paragraphs for the transport assessment are 2.2.5 and 2.2.6 which state:

"2.2.5 New fossil generating stations need to be accessible for the delivery and removal of construction materials, fuel, waste and equipment, and for employees.

2.2.6 Government policy encourages multi-modal transport and materials (fuel and residues) may be transported by water or rail routes where possible. Applicants should locate new fossil generating stations in the vicinity of existing transport routes wherever possible. Although there may in some instances be environmental advantages to rail or water transport, whether or not such methods are viable is likely to be determined by the economics of the scheme. Road transport may be required to connect the site to the rail network, waterway or port. Any application should therefore incorporate suitable access leading off from the main highway network. If the existing access is inadequate and the applicant has proposed new infrastructure, the IPC should satisfy itself that the impacts of the new infrastructure are acceptable as set out in Section 5.13 of EN-1."

National Planning Policy Framework

16.2.5 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) sets out the Government's national planning policies for England.

16.2.6 The NPPF states that the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how to travel. The policy states that local authorities should support a pattern of development, which, where reasonable to do so, facilitates the use of sustainable modes of transport. Plans and decisions should ensure that developments that generate significant numbers of vehicle movements are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised.

16.2.7 The NPPF recommends that a Transport Statement (TS) or Transport TA should support all developments that generate significant numbers of vehicle movements and that development should only be prevented or refused on

transport grounds where the residual cumulative impacts of development are severe.

Local Planning Policy

Redcar and Cleveland Local Plan 2018 – 2032

16.2.8 The Local Plan was adopted in 2018 and sets out the vision and overall development strategy for the borough and how it will be achieved for the period until 2032.

16.2.9 Policy TA 1 states that:

'The Council and its partners will ensure that the transport requirements of new development, commensurate to the scale and type of development, are taken into account and seek to promote sustainable travel to minimise environmental impacts and support residents' health and wellbeing.

16.2.10 Proposals will be supported that:

- improve transport choice and encourage travel to work and school by public transport, cycling and walking;
- minimise the distance that people need to travel,
- where appropriate contribute positively to wider demand management measures to address congestion, environmental and safety issues'.

16.2.11 Policy TA 2 states that:

'The council will work together with neighbouring authorities, the Tees Valley Combined Authority, Tees Valley Unlimited (the Local Enterprise Partnership), the Government, developers and transport providers to improve accessibility within and beyond the borough, which will support economic, tourism and regeneration objectives for both Redcar and Cleveland and the wider Tees Valley.

This will include 'working with Highways England to improve capacity to the A66, A1053 and A174, particularly Greystones roundabout'.

Tees Valley Combined Authority Strategic Transport Plan 2020 – 2030

16.2.12 The focus of the Tees Valley Combined Authority Strategic Transport Plan is aimed at improving the transport system for local people and businesses ensuring integration between different transport modes. This plan has been developed by the five constituent local authorities including Darlington, Hartlepool, Middlesbrough, Redcar & Cleveland and Stockton-on-Tees.

16.2.13 The plan has the following aims and aspirations to be delivered over the plan period:

- Better transport links helping to create more jobs;
- Improving the affordability, quality and reliability of people's daily commute;
- More reliable and affordable public transport, walking and cycling options;
- Improved technology making travelling around as easy and simple as possible.

Redcar and Cleveland Local Transport Plan 2011 – 2021

16.2.14 The Redcar and Cleveland third Local Transport Plan, 2011 - 2021 (LTP3) was adopted by RCBC in March 2011 and builds upon the core strategy and the Teesside Local Enterprise Partnership Statement of Transport Ambition by setting five main goals for city and regional networks, namely:

- reduce carbon emissions;
- support economic growth;
- promote quality of opportunity;
- contribute to better safety, security and health; and
- improve quality of life and a healthy natural environment.

16.2.15 The following four policies have been identified as being critical in achieving the goals of the LTP3 and are considered to be of particular relevance to the consideration of the Proposed Development's potential transport impacts:

- PEG2 – manage the demand for travel, in particular during peak periods. The package of measures will include car parking restraint and enforcement; providing informed travel choices; considerate land use planning;
- PEG4 – address localised congestion issues, in particular through the development of Workplace Travel Plans (WTP) and through localised traffic management schemes;
- PEG5 – manage freight transport in the borough to provide reliability of journey times and minimise adverse environmental impacts; and
- SSH1 –improve road safety in the borough through a combination of education, encouragement, engineering and enforcement initiatives.

Other Guidance

Planning Practice Guidance

16.2.16 The Government's Planning Practice Guidance (PPG) 'Travel Plans, Transport Assessments and Statements in Decision-taking' was first published in March 2014 on the Government planning guidance planning portal (Department for Communities and Local Government, 2014) and has been used to inform the TA.

Guidelines for the Environmental Assessment of Road Traffic

16.2.17 The Guidelines for the Environmental Assessment of Road Traffic (GEART) were published in 1993 by the Institute of Environmental Assessment (IEA). The guidelines provide a basis for a comprehensive and consistent approach to the appraisal of traffic and transport impacts. Extensive reference has been made to these guidelines throughout the preparation of this chapter.

Department for Transport Circular 02/2013: The Strategic Road Network and the Delivery of Sustainable Development

16.2.18 Circular 02/2013 was published in September 2013 by the Department for Transport which sets out the way in which Highways England will engage with the development industry to deliver sustainable development and, thus,

economic growth, whilst safeguarding the primary function and purpose of the strategic road network and has been used to inform the TA.

The Strategic Road Network: Planning for the Future

16.2.19 The Strategic Road Network: Planning for the Future 'A guide to working with Highways England on Planning Matters' published by Highways England in September 2015 offers advice and information regarding the information it expects to see within a planning proposal and has been used to inform the TA.

Water Preferred Policy for the Movement of Abnormal Loads

16.2.20 The 'Water preferred policy guidelines for the movement of abnormal loads,' published in 2012 by Highways England sets out guidance recognising that where practical, economic and environmentally desirable, the largest abnormal loads should be moved by inland and/ or coastal water to reduce the impact caused by moving these loads by road. This guidance document provides details of the water preferred policy for the movement of abnormal loads and guidance to help those wishing to move an abnormal load determine whether their load should be moved by water or road.

16.3 Assessment Methodology and Significance Criteria

Overview

16.3.1 The environmental impact of traffic generated by the Proposed Development has been assessed with reference to GEART (IEA, 1993) and other guidance as detailed in Section 10.2. In accordance with guidance, issues including severance, pedestrian amenity, fear and intimidation, highway safety and driver delay associated with the Proposed Development have been investigated and are reported below.

16.3.2 For the purposes of this chapter no allowance has been made for the delivery of construction materials by water or rail (in order to assess the 'worst case' construction road traffic impact), but the Contractors will review options for the use of rail and water when sourcing construction materials.

16.3.3 Any likely significant environmental effects relating to noise and vibration and air pollution, generated by traffic from the Proposed Development are considered in Chapter 8: Air Quality and Chapter 11: Noise and Vibration of this ES.

Study Area

16.3.4 The Proposed Development is accessed from the A1085 Trunk Road, a dual carriageway road running north-east to south-west between Redcar and the A1053 Tees Dock Road. The road is subject to the national speed limit. Travelling south-west from the site access, the A1085 Trunk Road provides a link to the A1053 Tees Dock Road which in turn connects to the A174 to the south and the A66 to the north. The A1053 Tees Dock Road and A174 are part of Highways England's core network.

16.3.5 Access routes to the Natural Gas Connection and CO_2 Gathering Network north of the River Tees are proposed via the A1046 Haverton Hill Rd / Port Clarence Road and the B1275 with compound access points proposed off the A178 Seaton Carew Road, A1185, Nelson Avenue, Cowpen Bewley Road and the unnamed road to Seal Sands (commonly known as Seal Sands Road).

16.3.6 Access routes to the Natural Gas Connection and CO_2 Gathering Network south of the River Tees are proposed via Sembcorp operated routes via the Wilton site to enable construction and other personnel into the Dabholm Gut areas and utilising land managed by Anglo-American. Access point locations are shown on Figure 5-1 (ES Volume II, Document Ref. 6.3)

16.3.7 The Study Area for this assessment has been defined by reference to the GEART (IEA, 1993). The guidelines set out two rules as follows:

- Rule 1 – include highway links where traffic flows are predicted to increase by more than 30% (or where the number of HGV is predicted to increase by more than 30%); and
- Rule 2 – include any other specifically sensitive areas where the traffic flow (or HGV component) are predicted to increase by more than 10%.

16.3.8 To define the Study Area, a network of road links has been identified and then tested against Rules 1 and 2. The road links that have been considered in determining if the above rules are satisfied, and which form the Study Area, are listed below and shown in Figure 16-3: Traffic Count Locations (ES Volume II, Document Ref. 6.3) i.e.:

- A1085 Trunk Road (east of PCC Site entrance);
- A1085 Trunk Road (west of PCC Site entrance);
- A1042 Kirkleatham Lane;
- A1085 Trunk Road (south of British Steel Lackenby entrance);
- A1085 Broadway;
- A66 (west of A1053);
- A1053 Greystone Road;
- B1380 High Street; and
- A174 (west of Greystones roundabout).

16.3.9 In addition, the following road links have been considered in relation to the Natural Gas Connection and CO_2 Gathering Network north of the Tees:

- A1046 Port Clarence Road;
- A178 Seaton Carew Road;
- Unnamed Road serving Seal Sands;
- B1275 Belasis Avenue; and
- A1185.

Sensitivity of Receptors

16.3.10 The sensitivity of a road, or the immediate area through which it passes, can be defined by the type of user groups who may use it. Vulnerable users include elderly residents and children. It is also necessary to consider footpath and cycle route networks that cross the roads within the Study Area.

16.3.11 A desktop exercise has been undertaken to classify the sensitivity of the routes within the Study Area. The classification of the link sensitivity is based on professional judgement. For example, if the route passes a school, care home or similar it would have a higher sensitivity due to the presence of vulnerable users. Similarly, if the route went through the middle of a town or village, it would have a higher sensitivity than if there was limited frontage development in the Study Area. Table 16-1 below identifies the links, the assigned sensitivity rating and the justification:

Table 16-1: Sensitivity of Receptors

Link	Link Description	Link Sensitivity	Rationale
1	A1085 Trunk Road (east of PCC Site entrance)	Low	The road is a dual carriageway and is subject to a de-restricted speed limit reducing to 40 mph prior to the junction with Ennis Road. There is no frontage development along the route until reaching the junction with the A1042. A shared footway/cycleway is provided either side of the carriageway which is street lit.
2	A1085 Trunk Road (west of PCC Site entrance)	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. A shared footway/cycleway is provided either side of the carriageway which is street lit.
3	A1042 Kirkleatham Lane	High	The two-lane single carriageway is subject to a 30 mph speed limit with residential properties on either side and is street lit. Pedestrian footways are provided either side of the carriageway separated by a grass verge. On-road cycle lanes are provided either side of the carriageway. The road passes Outwood Academy Redcar 800 m to the south of the A1085 Trunk Road.
4	A1085 Trunk Road (south of British Steel Lackenby entrance)	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. A shared footway/cycleway is provided either side of the carriageway which is street lit.
5	A1085 Broadway	Medium	The two-lane single carriageway is subject to a 30 mph speed limit with residential properties on either side and is street lit. On-road cycle lanes are provided either side of the carriageway. Pedestrian footways are provided either side of the carriageway separated by the cycle lane and on-street parking bays.
6	A66 (west of A1053)	Low	The road is a dual carriageway and is subject to a 50 mph speed limit. Any frontage development is industrial in nature.
7	A1053 Greystone Road	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. There are no pedestrian or cycle facilities along the route.

Link	Link Description	Link Sensitivity	Rationale
8	B1380 High Street	Low	The two-lane single carriageway is subject to a 30 mph speed limit with a pedestrian footway provided on the northern side of the carriageway. The route passes a cluster of residential properties on the north side of the carriageway.
9	A174 (west of Greystone roundabout)	Low	The road is a dual carriageway and is subject to a de-restricted speed limit. There is no frontage development along the route. There are no pedestrian or cycle facilities along the route.
10	A1046 Port Clarence Road (to the Natural Gas Connection and CO_2 Gathering Network)	High	The two-lane single carriageway is subject to a 30 mph speed limit and is street lit. A shared footway/cycleway is provided either side of the carriageway. Residential properties are located on the north side of the carriageway but are located a good distance back from the highway. High Clarence Primary School is located on this road.
11	A178 Seaton Carew Road (to the Natural Gas Connection and CO_2 Gathering Network))	Low	The two-lane single carriageway is subject to a de-restricted speed limit. No footways are provided along the route. There is no frontage development along the route which passes through open country.
12	Unnamed Road serving Seal Sands (to the Natural Gas Connection and CO_2 Gathering Network).	Low	The two-lane single carriageway is subject to a 40 mph speed limit and is street lit. No footways are provided either side of the carriageway. The road provides access to a number of petro-chemical facilities; therefore, any frontage is industrial in nature.
13	B1275 Belasis Avenue (to the Natural Gas Connection and CO_2 Gathering Network)	Low	The two-lane single carriageway is subject to a de-restricted speed limit and is street lit. A footway is provided along the northern side of the carriageway. There is no frontage development along the route which passes through open country.
14	A1185 (to the Natural Gas Connection and CO_2 Gathering Network)	Low	The two-lane single carriageway is subject to a de-restricted speed limit. No footways are provided along the route. There is no frontage development along the route which passes through open country.

Assessment Methods

16.3.12 The assessment methodology adopted in this chapter, as contained in the GEART (IEA, 1993), is recognised as the industry standard methodology for the assessment of traffic and highway impacts. The guidelines outline the issues and the respective changes in volume and composition of traffic regarded as necessary before each issue results in traffic and transport impacts.

16.3.13 Chapter 5: Construction Programme and Management (ES Volume I, Document Ref. 6.2) provide details on the proposed construction programme for the Proposed Development.

16.3.14 The assessment scenarios considered in chapter are:

- construction phase - assuming a worst case that construction commences in late 2022 with a peak of construction in 2024;
- opening year - for the purposes of assessment in this chapter that operation commences in 2026); and
- decommissioning of the Low Carbon Electricity Generating Station – 2051-2056.

16.3.15 The following environmental effects are susceptible to changes as a result of the Proposed Development.

- **Severance:** Severance occurs in a community when a major artery separates people from places and other people. Severance occurs from difficulty of crossing a road or where the road itself creates a physical barrier. Severance can be caused to pedestrians or motorists. The Guidelines for the Environmental Assessment of Road Traffic (IEA, 1993) suggest that changes in total traffic flow of 30%, 60% and 90% result in slight, moderate and substantial changes in severance respectively.
- **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, pavement width and separation between vehicles and pedestrians. The impact manifests itself in fear and intimidation, exposure to noise and vehicle emissions. The Guidelines for the Environmental Assessment of Road Traffic (IEA, 1993) suggest that a doubling or halving of total traffic flow or the HGV composition could lead to perceptible negative or positive impacts upon pedestrian amenity.
- **Fear and Intimidation:** The volume of traffic and its HGV composition are the factors that contribute to fear and intimidation. In the absence of thresholds set out in the Guidelines for the Environmental Assessment of Road Traffic (IEA 1993), this PEI Report considers that changes in total traffic flow of 30%, 60% and 90% are considered to result in slight, moderate or substantial impacts.
- **Highway Safety:** Highway safety is assessed by the frequency and severity of injury accidents that are attended by the police and recorded in official accident statistics. Intensification of use or changes in the composition of traffic has the potential to have an effect on collision rates. The examination of recent collision statistics on routes within the Study Area will highlight any hotspots that need further examination.
- **Driver Delay:** The use of industry standard junction capacity modelling programs provides a methodology to quantify junction delay. Driver delay is only likely to be significant where the existing Study Area highway network is at or close to capacity.
- **Hazardous Loads:** Assessed based on the estimated number and composition of such loads. Where the number of movements is considered to be significant, a risk analysis should be undertaken to illustrate the potential for an accident to happen and the likely effect of such an event.

Significance Criteria

16.3.16 Using the information set out above, the magnitude of traffic impacts is defined in Table 16-2.

Table 16-2: Traffic and Transport Assessment Framework – Magnitude of Impacts

Type of Impact	Magnitude of Impact			
	Very Low	Low	Medium	High
Severance	Change in total traffic flow of < 30%	Change in total traffic flow of 30% - 60%	Change in total traffic flow of 61% - 90%	Change in total traffic flow of >90%
Pedestrian amenity	Changes in traffic flow (or HGV component) less than 50%	Changes in traffic flow (or HGV component) of 50% to 100%	Changes in traffic flow (or HGV component) of 101% to 150%	Change in traffic flow (or HGV component) of >151%
Fear and Intimidation	Change in total traffic flow of < 30%	Change in total traffic flow of 30% - 60%	Change in total traffic flow of 61% - 90%	Change in total traffic flow of >90%
Highway safety	Magnitude of impact derived using professional judgment informed by the frequency and severity of recorded collisions within the Study Area and the forecast increase in traffic			
Driver delay	Magnitude of impact derived using professional judgment informed by the increase in vehicle delay and whether a junction is at, or close to capacity			

16.3.17 By combining the receptor sensitivity with the magnitude of impact using the assessment matrix shown in Table 16-3, traffic effects are classified as negligible, minor, moderate or major (adverse or beneficial).

Table 16-3: Classification of Effects

Magnitude of Impact	Sensitivity/importance of receptor			
	High	Medium	Low	Very Low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very Low	Minor	Negligible	Negligible	Negligible

16.3.18 Only moderate and major effects are considered to be ‘significant’ for the purposes of the EIA Regulations; minor and negligible effects are ‘not significant’.

Sources of Information / Data

16.3.19 As set out in detail in Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4), a series of 7-day automatic traffic counts (ATC) were undertaken in 2019 at the following locations to provide a baseline for comparison on the road links:

- A1085 Trunk Road (east of PCC Site entrance);

- A1085 Trunk Road (west of PCC Site entrance);
- A1042 Kirkleatham Lane;
- A1085 Trunk Road (South of British Steel Lackenby Entrance);
- A1085 Broadway;
- A66 (west of A1053);
- A1053 Greystone Road;
- B1380 High Street;
- A174 (west of Greystone roundabout);
- A1046 Port Clarence Road;
- A178 Seaton Carew Road;
- Unnamed Road serving Seal Sands;
- B1275 Belasis Avenue; and
- A1185 (west of A178 Seaton Carew Road).

16.3.20 Counts were undertaken between 19th November 2019 and 25th November 2019. Traffic flows for the A1053 Greystone Road and A174 were obtained from Highways England's Webtris database for the month of September 2019. Traffic flows for the A1185 and B1275 were obtained from the Department for Transport Road Traffic Statistics website for 2019.

16.3.21 In addition to the ATC counts, it was agreed with the Local Highway Authority and Highways England that the impact of the Proposed Development would be examined at the following junctions on the local highway network for the overall network morning (AM) and evening (PM) peak hours:

- MCC 1: A1085/West Coatham Lane/PCC Site access roundabout;
- MCC 2: A1085/A1053 roundabout; and
- MCC 3: A1053/A174/B1380 roundabout.

16.3.22 The junction surveys were undertaken on Tuesday 19 November 2019 between the hours of 06:00 – 10:00 and 16:00 – 20:00. Further information is provided in Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4). A plan showing the location of the traffic counts is included as Figure 16-3: Traffic Count Locations (ES Volume II, Document Ref. 6.3).

16.3.23 In order to establish the peak hours for assessment, the total flows arriving at each individual junction have been calculated for each hour so that the peak hour can be identified.

Consultation

16.3.24 Consultation for the Proposed Development has been ongoing and commenced at the EIA Scoping Stage with the preparation of the EIA Scoping Opinion Report which was submitted in February 2019 and Scoping Opinion was received from the Planning Inspectorate in April 2019. (Appendix 1A in ES Volume III, Document Ref. 6.4).

16.3.25 The Applicants also undertook a formal Section 42 and Section 47 consultation, which commenced at the same time as the publication of the PEI Report in early July 2020 and ended in September 2020. The issues that have been raised through consultation, and how these have been considered and addressed within the design evolution of the Proposed Development and the EIA is set out where relevant within each of the topic chapters in the ES and where relevant in Chapter 6: Alternatives and Design Evolution (ES Volume I, Document Ref. 6.2).

16.3.26 Table 16-4 provides a summary of how comments raised by stakeholders to date in relation to traffic and transportation have been considered and actioned where appropriate.

Table 16-4: Consultation Summary Table

Consultee	Date and nature of consultation	Summary of consultee comments (where relevant to traffic and transportation)	Summary of response/ how comments have been addressed
Secretary of State	April 2019 (EIA Scoping Opinion)	The ES should confirm and justify that there is no discernible increase to operational traffic movements. If this can be demonstrated, the Inspectorate agrees that a detailed assessment of operational traffic can be scoped out.	The level of operational traffic has been quantified within the Transport Assessment (refer to Appendix 16A in ES Volume III). However, the impacts of operational traffic have not been assessed in this chapter, as agreed through Scoping.
		Any temporary closures and/or diversions of PRoW should be identified within the ES.	Some temporary short term closures of PRoWs may be required during construction phase (see Chapter 5: Construction Programme and Management (ES Volume I, Document Ref. 6.2)
		Consideration should be given to both motorised and non-motorised road users. Where significant effects to road users are likely, the ES should assess driver delay, road safety, pedestrian delay, pedestrian amenity, driver stress, severance, accidents and safety and hazardous loads.	This is noted.
		The ES should clearly explain how traffic movements have been predicted and what models and assumptions have been used to inform the assessment in the ES. Anticipated numbers of vehicle movements should be set out (including vehicle type, peak hour and daily movements).	Full details provided within Appendix 16A: Transport Assessment (ES, Volume III, Document Ref. 6.4)..
		The Traffic and Transport and Cumulative Effects aspect chapters should clearly explain the approach adopted to estimate traffic growth as it appears in the TA. The explanation should include reference to appropriate software such as the Department for Transport's	Full details provided within the TA (see Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4).

Consultee	Date and nature of consultation	Summary of consultee comments (where relevant to traffic and transportation)	Summary of response/ how comments have been addressed
		TEMPRO software, where relevant. This should be kept under review should any other development come forward which may trigger the need to update the previous traffic modelling work.	
		The Inspectorate welcomes the Applicant's commitment to consult with RCBC and Highways England on the scope of the TA. The Applicant is also advised to make effort to agree the scope with STBC, given that a large proportion of the connection works would be located along existing roads within the borough.	The Transport Assessment Scoping Report has been issued to RCBC, STBC and the HE. Responses have been received from RCBC and HE.
		The Applicant is advised to consider Section 2.5 of the GEART guidelines when identifying receptors which are sensitive to changes in traffic conditions. The Inspectorate advises that these should include nature conservation sites, residential receptors and non-motorised road users where significant effects are likely to occur.	This is noted. Full details provided in Table 16-1 of this Traffic and Transport Chapter.
		The ES should clearly define the Study Area used for the assessment and explain the approach taken to do so which should be influenced by the extent of likely impacts. The ES should include a plan to depict the Study Area.	To define a Study Area, a network of road links has been identified and then tested against Rules 1 and 2 of the GEART guidelines. Details are provided in Section 16.3 of this chapter. The Study Area for assessment has been agreed with Highways England and Redcar and Cleveland Borough Council through consultation on the TA Scoping Report.
		The Inspectorate advises the Applicant to make effort to agree the need for and scope of any site-specific traffic surveys. The ES should contain details of any traffic surveys undertaken, including times, dates and locations.	The survey details are included in Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4)
		The Inspectorate welcomes the Applicant's proposal to produce plans such as a Construction Worker Travel Plan and a Construction Traffic Management Plan. A	A Construction Worker Travel Plan and a Construction Traffic Management Plan are provided in Appendices 16B:

Consultee	Date and nature of consultation	Summary of consultee comments (where relevant to traffic and transportation)	Summary of response/ how comments have been addressed
		draft/outline of these plans should be provided with the DCO application and should contain sufficient detail to give confidence as to their efficacy. It should be clear how the implementation of such a plan would be secured in the DCO.	Construction Worker Travel Plan and 16C: Framework Construction Traffic Management Plan (ES Volume III, Document Ref. 6.4).
		The ES should identify where roads and railways would be crossed by the Proposed Development and detail the crossing methodology that would be utilised.	See Chapter 5: Construction Programme and Management (ES Volume I, Document Ref. 6.2).
		The ES should confirm the worst-case number of abnormal loads required and the types of vehicles required. Any mitigation measures required to facilitate the delivery of abnormal loads should be detailed in the ES and any resultant likely significant effects assessed. The Applicant should consider whether utilisation of the existing river and rail connections for transportation of abnormal loads could represent an environmentally better outcome rather than road transport.	Abnormal Indivisible Loads will be imported by ship using the wharf at the Redcar Bulk Terminal (RBT). Information on this including worst case shipping movements is presented in Chapter 5: Construction Programme and Management (ES Volume I, Document Ref. 6.2) and summarised in ES Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4). Ship movements are also assessed in the Navigational Risk Assessment (Appendix 20B, ES Volume III, Document Ref. 6.4). AILs weighing below 100 Tonnes may also be imported by ship using the harbour facilities at Teesport.
Redcar & Cleveland Borough Council	January 2020 (TA Scoping)	Methodology for assessment is acceptable. With a peak construction workforce of 1200 workers, the developers would need to maximise their promotion of the use of crew minibuses and car sharing in order to minimise the use of private cars and the level of car parking on site.	The appointed contractors will be required to prepare a Construction Workers' Travel Plan (CWTP) and this will be secured by a Requirement of the draft DCO.
Highways England	February 2020 (TA Scoping)	Given two site locations are still being considered, forthcoming transport considerations will need to include concrete details for the chosen site location, given that if the Wilton site is to come forward, this will take direct access from the SRN and adequate and safe access/egress will need to be demonstrated.	The Wilton site is no longer being considered. Details on the site location and access are provided in Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4).

Consultee	Date and nature of consultation	Summary of consultee comments (where relevant to traffic and transportation)	Summary of response/ how comments have been addressed
		Further details regarding the impact of the generation of construction traffic is required. It is expected that a CTMP be supplied to Highways England with an appropriate construction activity plan for the chosen site given that the period of construction is currently referred to in quarters and specific months are not identified for the period of construction. CH2M would expect this to reflect a detailed and live document that would aim to control and manage both HGV and staff construction movements.	The appointed contractors will be required to prepare a Construction Traffic Management Plan (CTMP) and Construction Workers' Travel Plan (CWTP) and this will be secured by a Requirement of the draft DCO. These plans will be in accordance with the Framework CTMP and CWTP prepared and submitted with the DCO Application to manage the traffic impact of the Proposed Development.
		CH2M would seek to understand what level of traffic generation is expected for both the gas pipeline construction and CO_2 pipeline construction as well as during operation of the site.	Details are provided within Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4).
		Based on the information presented in the report, the volume of traffic and likely routing of traffic, in CH2M's view, will necessitate junction capacity assessments on the roundabouts in vicinity of the site. It will be important that such assessments capture all movements, including u-turning movements for HGVs for example, if necessary.	As discussed and agreed in a telephone call with Highways England on 21st December 2020, junction modelling has been undertaken at the A1085 / A1053 signalised roundabout junction. It was agreed that junction modelling was not required at the A1053 / A174 / B1380 signalised roundabout due to less than 30 two-way construction vehicles passing through the junction during the AM and PM peak hours. Details are provided within Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4).
		Highways England welcomes measures such as travel planning and suitable parking provision in reducing single car occupancy to and from the site as this will be key in managing down the number of trips on the SRN, linked to a CTMP.	The appointed contractors will be required to prepare a Construction Traffic Management Plan (CTMP) and Construction Workers' Travel Plan (CWTP) and this will be secured by a Requirement of the draft DCO. These plans will be in accordance with the Framework CTMP and CWTP prepared and submitted with the DCO Application to manage the traffic impact of the Proposed Development.

Consultee	Date and nature of consultation	Summary of consultee comments (where relevant to traffic and transportation)	Summary of response/ how comments have been addressed
		Further details for the trip distribution and assignment exercises should be supplied given CH2M are of the view a higher proportion of vehicles are likely to utilise the SRN.	Details are provided within Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4).
		It is welcomed that a consideration of safety is to be made and CH2M would emphasise the safe and functional operation of Highways England is key and a suitable assessment of the A1053/A174 will be needed.	Details are provided within Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4).
Public Health England	September 2020 S42 Response on PEI Report	Chapter 16 (Traffic and Transport) states that a construction traffic management plan (CTMP), construction worker travel plan (CWTP) and employee travel plans will be submitted as part of the DCO application.	The appointed contractors will be required to prepare a Construction Traffic Management Plan (CTMP) and Construction Workers' Travel Plan (CWTP) and this will be secured by a Requirement of the draft DCO. These plans will be in accordance with the Framework CTMP and CWTP prepared and submitted with the DCO Application to manage the traffic impact of the Proposed Development.
		Consideration of the impact of the proposed development on vulnerable populations (such as children walking and cycling to the schools listed in paragraph 20.4.14, and those travelling to the healthcare facilities listed in paragraph 20.4.15) should also be included in the road safety assessment provided in the final ES. It is important that fear of road traffic does not reduce opportunities for walking and cycling.	In line with GEART (IEA, 1993) and other guidance as detailed in Section 16.2. issues including severance, pedestrian amenity, fear and intimidation, highway safety and driver delay associated with the Proposed Development have been investigated and report in this chapter.
		The traffic and transport chapter also state that some public rights of way will be temporarily disrupted during construction. This could also reduce opportunities for physical activity. This is important because the population and human heath chapter has identified that those living	There are no PRoWs crossing the PCC Site therefore the development will have no direct impact on PRoWs. Some temporary short-term closures of PRoWs may be required during construction phase. (see Chapter 5: Construction Programme and Management (ES Volume I, Document Ref.

Consultee	Date and nature of consultation	Summary of consultee comments (where relevant to traffic and transportation)	Summary of response/ how comments have been addressed
		in the areas surrounding the proposed development experience higher early death rates due to cardiovascular disease and cancer. Therefore, the impact and duration of the disruption should be included in the final ES, along with the developers' proposed mitigation for the temporary loss of the public right of way (PRoW).	6.2)
BNP Paribas Real Estate on behalf of Royal Mail	[Undated] S42 Response on PEI Report	Full response text not included but summary points made by Royal Mail as follows: Overall, the above measures appear to be a reasonable response by the applicant, but Royal Mail requests that: 1. The Environmental Statement to be submitted with NZT Power & NZNS Storage application includes information on the needs of major road users (including Royal Mail) and acknowledges the requirement to ensure that major road users are not disrupted through full consultation at the appropriate times during the DCO and development processes. 2. Royal Mail is specifically named within the traffic and transportation section of the Environmental Statement in the list of transport operators for consultation on usage of the network. 3. Royal Mail is fully consulted by NZT Power & NZNS Storage in advance of the preparation of the contractor's CTMP. 4. Major road hauliers such as Royal Mail are included in the public communications strategy for this scheme.	All Royal Mails comments are noted. As requested, Royal Mail have been included within the consultation section of Appendix 16C: CTMP (ES Volume III, Document Ref. 6.4).

Consultee	Date and nature of consultation	Summary of consultee comments (where relevant to traffic and transportation)	Summary of response/ how comments have been addressed
		5. NZT Power & NZNS Storage and the appointed contractor will keep Royal Mail fully informed in advance of all temporary road closures and/or delivery of Abnormal Indivisible Loads.	
Durham County Council	September 2020 S43 Response on PEI Report	From a highway's perspective and impact on County Durham there is not any detail at this stage. The information suggests 5,500 direct jobs during construction. This level of employment and movement may generate network trips in County Durham. It is therefore considered that Durham County Council must be involved in the scoping and production of a Transport Assessment as part of the EIA.	Durham County Council have been consulted at the various stages of consultation for the Proposed Development. Durham County Council will have the opportunity to comment further on the TA and ES Chapter contained within the ES as submitted with the Application.
DLA Piper on behalf of Sembcorp Utilities (UK) Limited	September 2020 Response on PEI	Sembcorp outlined potential impacts on their current operations at The Wilton International Site, which includes the transportation of gas and hazardous substances.	The points are noted however the area which included the Wilton International site has now been removed from the Site boundary.

Rochdale Envelope

16.3.27 The maximum and minimum parameters adopted for building sizes within the Rochdale Envelope defined for the Proposed Development do not have any material impact on vehicle numbers accessing the PCC Site and therefore are not considered further in this assessment. Similarly, where flexibility is to be retained in the application, any changes are unlikely to have a material difference on the volumes of traffic accessing the PCC Site during construction or the Natural Gas Connection and CO_2 Gathering Network.

16.4 Baseline Conditions

Existing Traffic Flows

16.4.1 The following highway links form the agreed highway network of interest for this assessment:

- A1085 Trunk Road (east of PCC Site entrance);
- A1085 Trunk Road (west of PCC Site entrance);
- A1042 Kirkleatham Lane;
- A1085 Trunk Road (south of British Steel Lackenby entrance);
- A1085 Broadway;
- A66 (west of A1053);
- A1053 Greystone Road;
- B1380 High Street;
- A174 (west of Greystone Roundabout);
- A1046 Port Clarence Road;
- A178 Seaton Carew Road;
- Unnamed Road serving Seal Sands;
- B1275 Belasis Avenue; and
- A1185 (west of A178 Seaton Carew Road).

16.4.2 Baseline 24-hour annual average daily traffic (AADT) two-way link flows are provided in Table 16-5 below.

Table 16-5: 2019 Baseline Traffic Flows

Link No.	Link Description	Total Vehicles	Total HGVs	% HGVs
1	A1085 Trunk Road (east of PCC Site entrance)	12,274	1049	8.5%
2	A1085 Trunk Road (west of PCC Site entrance)	14,387	1275	8.9%
3	A1042 Kirkleatham Lane	11,791	762	6.5%
4	A1085 Trunk Road	16,058	2012	12.5%
5	A1085 Broadway	8,093	521	6.4%
6	B1380 High Street	9,835	826	8.4%
7	A66, 140 m east of Whitworth Road	19,865	3662	18.4%
8	A1046 Port Clarence Road, 20 m north of Beech Terrace	7,612	896	11.8%
9	A178 Seaton Carew Road, 535 m north of Huntsman Drive	7,814	998	12.8%
10	Unnamed Road, 725 m east of A178 Seaton Carew Road	4,206	860	20.4%
11*	A1053 Greystone Road	14,387	1,392	9.7%
12*	A174 (west of Greystone roundabout)	31,758	1,936	6.1%
13**	B1275 Belasis Avenue	2,451	72	2.9%
14**	A1185 (west of A178 Seaton Carew Road)	5,651	1,026	18.1%

*Highways England Webtris Data **Department for Transport Road Traffic Statistics

Personal Injury Accidents

16.4.3 An examination of the routes within the Study Area has been undertaken to identify 'collision clusters.' Collision cluster sites are considered to be sensitive to significant changes in traffic flows and could therefore potentially be impacted by the project.

16.4.4 The criteria adopted for identifying potential collision clusters within the Study Area for both urban and rural areas are:

- a rural collision cluster site is one at which there have been four or more personal injury collisions within a 100 m radius of each other during a five-year period and the speed limit of the road is over 40 mph; and
- an urban collision cluster site is one at which there have been four or more personal injury collisions within a 50 m radius of each other during a five-year period and the speed limit of the road is 40 mph or less.

16.4.5 Personal Injury Collision (PIC) data was obtained from the Crashmap website for the most recent five-year period (January 2015 – December 2019) available and examined using the above criteria (detailed analysis is provided within Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4). This identified five accident clusters:

Cluster One: Roundabout Junction of the A1085, West Coatham Lane and PCC Site access

16.4.6 The junction has experienced five collisions within the past five years of which three were slight in severity and two serious in severity. Of the three slight accidents all three involved a vehicle turning right and colliding with an oncoming vehicle. Of the two serious accidents, one involved a car and pedal cyclist collision and one involved a single vehicle loss of control.

16.4.7 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

Cluster Two: Roundabout Junction of the A174 and A1053 Greystone Road

16.4.8 The junction has experienced four collisions within the past five years of which all four were slight in severity. Of these three involved a rear end shunt collision and one involved a single vehicle loss of control.

16.4.9 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

Cluster Three: Roundabout Junction of the A1185 and Seaton Carew Road

16.4.10 The junction has experienced seven collisions within the past five years of which four were slight in severity, two serious in severity and one fatal in severity. Of the four slight accidents, two involved a car and pedal cyclist colliding, one involved a rear end shunt and one involved a single vehicle loss of control. Of the two serious and one fatal accident, all three involved a single vehicle loss of control.

16.4.11 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

Cluster Four: Crossroad Junction of the A66/Eston Road and Church Lane

16.4.12 The junction has experienced five collisions within the past five years of which three were of slight severity and two of serious severity. Of these two involved a vehicle colliding with a pedal cycle, one involved a vehicle turning left and colliding with an oncoming vehicle, one involved a vehicle performing a U-turn at the junction and colliding with another vehicle and one involved a rear end shunt.

16.4.13 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

Cluster Five: Roundabout Junction of the A1085 Broadway and Birchington Avenue

16.4.14 The junction has experienced nine collisions within the past five years of which eight were of slight severity and one of serious severity. Of the eight slight accidents, two involved a car and pedal cyclist colliding, three involved a car colliding with a pedestrian and three involved a rear end shunt. The accident of serious severity involved a car colliding with a pedal cyclist.

16.4.15 Analysis suggests that the accidents were attributed to driver/ rider error such as a failure to judge the other person's path or speed, a failure to look properly and/ or loss of control. None of the accidents can be attributed to an inadequate highway design.

Future Baseline

16.4.16 It is currently anticipated that (subject to the necessary consents being granted and an investment decision being made), construction would commence around Q4 2022 and would continue for a period of 51 months. The actual peak of construction would occur in 2024 (Months 22 – 26) based on the construction workforce profile and this has been used for the assessment year. During the peak of construction, both construction of the PCC and the Natural Gas Connection (pipeline construction) will be taking place concurrently. Further details of construction staff profiles are provided in Section 16.6.

16.4.17 The future baseline year flows have derived by applying the national standard programme Trip End Model Presentation Program growth factors (TEMPRO 7.2b) to the above flows and are indicated in Table 16-6. These growth factors have been taken into account when comparing the baseline and future traffic scenarios.

Table 16-6: TEMPRO Traffic Growth Factors (average day)

Road Type	Year	AM Peak	PM Peak	All Day
Principal	2019-2024	1.0479	1.0459	1.0475
Trunk	2019-2024	1.0549	1.0528	1.0544

16.4.18 Future year baseline scenarios are not detailed for 2026 (opening) due to the very low traffic flows generated by the operation of the Proposed Development. Therefore, a quantitative assessment of operational traffic has not been necessary, as vehicle numbers generated would be considerably lower than those that would be experienced during the construction period.

16.4.19 Operational traffic movements will be small given that the proposed development will employ up to 100 staff who will work shifts. Fuel would be delivered by pipeline and other operational and maintenance consumables are likely to be minimal.

16.4.20 During an outage, it could be expected that up to 200 additional staff could be on-site on any one day. However, outages are expected to occur infrequently (once every 5 years) and are short-lived (approximately 3 months). Therefore, it is considered that the effects of operational traffic would be negligible and a detailed assessment of the operational phase of the development is not proposed within the Transport Assessment.

16.4.21 Future year baseline traffic flows for the assessment year of 2024 peak of construction are presented in Table 16-7.

Table 16-7: 2024 Baseline Traffic Flows (24 Hour AADT)

Link no.	Link Description	Total Vehicles	Total HGVs	% HGVs
1	A1085 Trunk Road (east of Site entrance)	12,857	1,099	8.5%
2	A1085 Trunk Road (west of Site entrance)	15,070	1,336	8.9%
3	A1042 Kirkleatham Lane	12,351	799	6.5%
4	A1085 Trunk Road (South of British Steel Lackenby entrance)	16,821	2,107	12.5%
5	A1085 Broadway	8,478	546	6.4%
6	A66 (west of A1053 Greystone Road)	20,808	3,836	18.4%
7	A1053 Greystone Road	15,170	1,468	9.7%
8	B1380 High Street	10,302	865	8.4%
9	A174 (west of Greystone roundabout)	33,486	2,041	6.1%

16.4.22 Future year baseline traffic flows for link roads to the north of the River Tees associated with the proposed Natural Gas Connection and the CO_2 Gathering Network are presented in Table 16-8.

Table 16-8: 2024 Baseline Traffic Flows (24 Hour AADT)

Link no.	Link Description	Total Vehicles	Total HGVs	% HGVs
10	A1046 Port Clarence Road	7,974	938	11.8%
11	A178 Seaton Carew Road	8,185	1,046	12.8%
12	Unnamed Road serving Seal Sands	4,406	901	20.4%
13	B1275 Belasis Avenue	2,567	75	2.9%
14	A1185 (west of A178 Seaton Carew Road)	5,919	1,075	18.2%

16.4.23 The assessment has had regard to the traffic generated by 'committed' developments, in accordance with the methodology for assessing potential cumulative effects with other schemes, as detailed in Chapter 24: Cumulative and Combined Effects (ES Volume I, Document Ref. 6.2) as follows:

- a gas fired CCGT generating station with a maximum generating capacity of up to 1,700 MW located on the south-west part of the Wilton International Complex which gained DCO consent in April 2019;
- 550 residential unit development on Kirkleatham Lane (once occupied), Redcar (Planning Ref: R/2016/0663/OOM);
- the York Potash Harbour Facilities Order which gained DCO consent in July 2016;
- the Mineral and Processing Refining Facility at the Wilton International Complex which gained planning consent in January 2018 (Planning Ref: R/2017/0876/FFM);
- Dogger Bank Teesside A&B which gained DCO consent in August 2015;
- Teesworks Development Zone covering 4,500 acres which has been identified for B1, B2 and B8 land uses;
- 1,250 residential unit development at Low Grange Farm, South Bank which gained planning consent in March 2016 (Planning Ref: R/2014/0372/OOM);
- the York Potash Materials Handling Facility which gained planning consent in August 2015 (Planning Ref: R/2014/0627/FFM);
- the proposed Redcar Energy Centre located at the Redcar Bulk Terminal which gained planning consent in January 2021 (Planning Ref: R/2020/0411/FFM);
- Teesside Renewable Energy Plant, Port Clarence which gained planning consent in July 2014 (Planning Ref: 14/1106/EIS); and
- 418,000 sqm of B2 / B8 land uses at South Bank, Teeswork Development Zone which gained planning permission in December 2020 (Planning Ref: R/2020/0357/OOM).

16.4.24 Committed development flows associated with these developments are summarised in Table 16-9 below.

Table 16-9: Committed Development Flows (24 Hour AADT)

Link no.	Link Description	Total Vehicles	Total HGV
1	A1085 Trunk Road (east of Site entrance)	2,916	398
2	A1085 Trunk Road (west of Site entrance)	7,604	1,475
3	A1042 Kirkleatham Lane	961	0
4	A1085 Trunk Road (south of British Steel Lackenby entrance)	7,604	1,475
5	A1085 Broadway	2,071	144
6	A66 (west of A1053 Greystone Road)	5,978	1,345
7	A1053 Greystone Road	6,396	1,291
8	B1380 High Street	632	137
9	A174 (West of Greystone roundabout)	2,959	643
10	A1046 Port Clarence Road	52	0
11	A178 Seaton Carew Road	176	124
12	Unnamed Road serving Seal Sands	0	0
13	B1275 Belasis Avenue	0	0
14	A1185 (west of A178 Seaton Carew Road)	124	124

16.4.25 Further developments as set out in Chapter 24: Cumulative and Combined Effects (ES Volume I, Document Ref. 6.2) have been considered but not included within the future baseline for reasons as set out in Table 16-9 below.

Table 16-10: Projects considered but not included within Assessment

Application Reference	Local Planning Authority	Description	Material Consideration
R/2008/0671/EA	Redcar	Construction of 300MW Biomass Fired Power Station	A review of the Transport Chapter identifies that the additional movements to be generated are considered insignificant.
R/2015/0393/RSM	Redcar	Residential development (188 dwellings), land at Stokesley Road – Guisborough	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2016/0326/OOM	Redcar	Residential development (400 dwellings), land north of Woodcock Wood and west of Flatts Lane, Normanby.	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2014/0455/OOM	Redcar	Residential development (126 dwellings), former Redcar & Cleveland college site - Redcar Lane, Redcar.	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2019/0403/FFM	Redcar	Refurbishment of 289 dwelling houses and construction of 32 dwellings, land at Caernarvon Close, Somerset Road, Cheddar Close, Avondale Close, Monmouth Road, Aberdare Road, Bridgend Close, Grangetown.	Transport impact considered to be insignificant as no TA/TS submitted in support of application. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows.
R/2019/0150/FFM	Redcar	Erection of 17 industrial units, Kirkleatham Business Park, off Troisdorf Way, Kirkleatham	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2019/0045/FFM	Redcar	Proposed storage and distribution warehouse, land adjacent to SK Chilled Foods Ltd, Nelson Street, South Bank.	Transport impact considered to be insignificant as no TA/TS submitted in support of application.

Application Reference	Local Planning Authority	Description	Material Consideration
R/2016/0484/FFM	Redcar	Proposed anaerobic biogas production facility and combined heat and power plant, former Croda Site Wilton International Redcar	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2016/0201/FFM	Redcar	Residential Development (51 dwellings), land at Fabian Road, Eston.	Transport impact considered to be insignificant as no TA/TS submitted in support of application. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2019/0767/OOM	Redcar	Outline application for the construction of an energy recovery facility (ERF) and associated development, Grangetown Prairie Land east of John Boyle Road and west of Tees Dock Road, Grangetown.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2018/0098/FF	Redcar	Construction and operation of a 12 MWe peaking power generation plant, land bound by A66 and Tees Dock Road, Grangetown.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2017/0564/FF	Redcar	Installation of an energy storage facility (up to 49.9 MW), land at Crow Lane adjacent to old Hall Farm and (A1053) Greystones Road Old Lackenby, Eston.	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2019/0183/OOM	Redcar	Residential Development (52 dwellings), land south of Spencerbeck Farm Normanby Road, Ormesby.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
R/2017/0815/FF	Redcar	Extension to existing car park (14 additional spaces), land at coast & country housing office corner of Kingsley Road & Shakespeare Avenue, Grangetown	Transport impact considered to be insignificant as no TA/TS submitted in support of application.

Application Reference	Local Planning Authority	Description	Material Consideration
R/2019/0031/FFM	Redcar	Construction and operation of a plastic conversion facility, former Croda Site Wilton International, Redcar.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2018/0587/FFM	Redcar	Refurbishment of redundant 'coal rail pit' for handling polysulphate products, potash conveyor, Tees Dock Terminal, Teesport	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2017/0906/OOM	Redcar	Outline planning application for an overhead conveyor and associated storage facilities in connection with the York potash project, land between Wilton International and Bran Sands, Redcar	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2016/0502/FFM	Redcar	Erection of workshop, Wilton International Wilton Redcar.	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2015/0466/FF	Redcar	Proposed energy centre, land at Huntsman Polyurethanes Wilton Site, Lazenby.	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2014/0820/FFM	Redcar	24 industrial units, land at Tod Point Road, Redcar.	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.
R/2019/0427/FFM	Redcar	Preparation of land for Regeneration and Development, land at former South Bank Works, Grangetown	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2020/0270/FFM	Redcar	Engineering operations including widening of Eston Road, formation of new roundabout and internal access roads, land at and adjoining Eston Road and A66	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2020/0318/FFM	Redcar	Engineering operations associated with ground remediation and preparation, land at Prairie Site, Grangetown	Transport impact considered to be insignificant as no TA/TS submitted in support of application.

Application Reference	Local Planning Authority	Description	Material Consideration
R/2020/0465/FFM	Redcar	Demolition of existing buildings/structures and engineering operations associated with ground remediation and preparation of land for development, land at Metals Recovery Area, North West of PD Ports	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
R/2006/0433/00	Redcar	Outline application for development of a container terminal, land at Teesport, Grangetown	Planning application has expired.
18/0634/FUL	Middlesbrough	Residential Development (89 Dwellings),land at Roworth Road, Middlesbrough.	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
17/0347/FUL	Middlesbrough	Residential Development (106 dwellings), land To The South Of College Road, Middlesbrough	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
H/2019/0275	Hartlepool	Energy Recovery (energy from waste) Facility, land to the south of Tofts Road, West Graythorp, Hartlepool.	Project is considered to fall outside the area of influence for the Proposed Development.
H/2014/0428	Hartlepool	Residential Development (1,200 dwellings), land south of Elwick Road, High Tunstall, Hartlepool.	Project is considered to fall outside the area of influence for the Proposed Development. Any traffic associated with the development would be incorporated within background growth applied to the 2019 baseline flows
19/2161/FUL	Stockton	Erection of new plant, new buildings and extensions to existing buildings, Lianhetech, Seal Sands, Seal Sands Road	The supporting TS identifies that the additional movements are unlikely to significantly add to vehicle movements on the road network surrounding the site.

Application Reference	Local Planning Authority	Description	Material Consideration
15/2187/FUL	Stockton	Proposed installation of a Gaseous Oxygen (GOX) Pipeline associated with Tees Valley 2 (TV2) Renewable Energy Facility (REF), Air Products Plc Huntsman Drive, Seal Sands, Middlesbrough	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
15/2181/FUL	Stockton	Erection of new plants for supply of steam and compressed air including 3 boilers, 3 compressors, a water purification plant, storage bunds for chemicals, North Tees Site Sabic UK Petrochemicals Seaton Carew Road, Port Clarence, Stockton-On-Tees,	Transport impact considered to be insignificant as no TA/TS submitted in support of application.
15/2799/FUL	Stockton	Construct and operate an extension to the existing Materials Recovery Facility (MRF) building to process material produced by the existing MRF operation, Impetus Waste Management, Huntsman Drive, Seal Sands, Stockton-on-Tees	Transport impact considered to be insignificant as no additional traffic movements to be generated.

16.4.26 Table 16-11 summarises the future year baseline (i.e. existing baseline traffic, plus growth factor, plus committed development traffic flows) for the assessment year 2024 peak of construction. It should be noted that we have not made any reduction in the TEMPRO growth factors to allow for the additional committed development traffic, and therefore this provides a more robust assessment.

16.4.27 For the purpose of clarity, the link numbers have been changed and split into two tables to identify which are for the Natural Gas Connection and the CO_2 Gathering Network to the north of the River Tees.

Table 16-11: 2024 Future Baseline (24 Hour AADT) South of the River Tees

Link no.	Link Description	Total Vehicles	Total HGVs	% HGVs
1	A1085 Trunk Road (east of Site entrance)	15,773	1,497	9.5%
2	A1085 Trunk Road (west of Site entrance)	22,674	2,811	12.4%
3	A1042 Kirkleatham Lane	13,312	799	6.0%
4	A1085 Trunk Road (south of British Steel Lackenby entrance)	24,425	3,582	14.7%
5	A1085 Broadway	10,549	690	6.5%

Link no.	Link Description	Total Vehicles	Total HGVs	% HGVs
6	A66 (West of A1053 Greystone Road)	26,786	5,181	19.3%
7	A1053 Greystone Road	21,566	2,759	12.8%
8	B1380 High Street	10,934	1,003	9.2%
9	A174 (west of Greystone roundabout)	36,445	2,684	7.4%

16.4.28 Table 16-12 summarises the future year baseline (i.e. existing baseline traffic, plus growth factor, plus committed development traffic flows) for the assessment year 2024 associated with the proposed Natural Gas Connection to the north of the River Tees. The 2019 baseline figures are shown in Table 16-5. The base 2024 flows are shown in table 16-8 and the committed development flows are shown in Table 16-9 above.

Table 16-12: 2024 Future Baseline (24 Hour AADT) North of the River Tees

Link no.	Link Description	Total Vehicles	Total HGVs	% HGVs
10	A1046 Port Clarence Road	8,026	938	11.7%
11	A178 Seaton Carew Road	8,361	1,170	14.0%
12	Unnamed Road serving Seal Sands	4,406	901	20.4%
13	B1275 Belasis Avenue	2,567	75	2.9%
14	A1185 (west of A178 Seaton Carew Road)	6,043	1,199	19.8%

16.5 Development Design and Impact Avoidance

16.5.1 The Applicants would implement a range of good practice mitigation measures during the construction phase to minimise impact upon local highways, including:

- implementation of the Construction Worker Travel Plan (CWTP) which includes measures and procedures to encourage construction workers to adopt modes of transport which reduces reliance on single occupancy private car use (a Framework CWTP can be found as Appendix 16B, ES Volume III, Document Ref. 6.4);
- liaison with the appointed Contractors for the potential to implement construction worker minibuses and car sharing options (considered as part of the CWTP); and
- implementation of the Construction Traffic Management Plan (CTMP) to control the impact of HGVs on the local road network during construction (a Framework CTMP can be found as Appendix 16C, ES Volume III, Document Ref. 6.4).

- during the commissioning (and operational) phase, working with suppliers to ensure that all relevant materials (including chemicals) brought to the Proposed Development Site that are classified as hazardous are transported in compliance with applicable regulations including the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG Regs) (as amended). This will include for example:
  - consignments being marked with the familiar “Emergency Access Codes”, and
  - including a telephone number for advice in the event of an emergency.

16.5.2 Once operational, the Proposed Development will employ up to 100 staff who will work shifts. Due to the very low traffic flows this would generate, no impact avoidance measures are proposed.

16.5.3 Chemicals and wastes transported to/ from the Proposed Development Site, where they are deemed to be hazardous, will be transported in fit for purpose vehicles and will comply with existing legal and regulatory duties. Regulation of hazardous loads is currently via the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) (United Nations, 2019). ADR sets out the requirements for the classification, packaging, labelling, and certification of dangerous goods. It also includes specific vehicle and tank requirements and other operational requirements. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 apply ADR in Great Britain.

16.5.4 Decommissioning would be expected to require some traffic movements associated with the removal (and recycling, as appropriate) of material arising from demolition and potentially the import of materials for land restoration and re-instatement. To minimise the impacts of decommissioning upon local highways, it is anticipated that a Decommissioning Traffic Management Plan (DTMP) would be prepared to control the impact of HGVs.

16.6 Likely Impacts and Effects

Construction - PCC Site and works South of the River Tees

16.6.1 It is assumed that access to and from the Site for all construction workers including those pipeline workers working to the south of the River Tees would be via the existing site entrance to the former Redcar Steelworks site located off the A1085/West Coatham Lane roundabout. At present, it is anticipated that pipeline workers would then be transferred to the working area at Dabholm Gut by minibus via Sembcorp land using the southern arm of the A1085/West Coatham Lane roundabout which provides access to the Wilton International Complex.

16.6.2 It is currently anticipated that (subject to the necessary consents being granted and an investment decision being made), construction work would commence around Q4 2022 over a period of up to 51 months ending Q4 2026.

16.6.3 A holistic approach has been undertaken within Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4) to identify the peak month of activity combining the workforce associated with construction of the Proposed Development and that associated with the construction of the proposed Natural Gas Connection and CO_2 Gathering Network.

16.6.4 It is expected that the construction workforce will peak at approximately 1,870 workers per day between Months 22 and 26 (i.e. Q3 / Q4 in 2024) comprising of 1,750 plant construction workers and 120 pipeline workers associated with the construction of the Natural Gas Connection. This is based on the anticipated construction programme and the profile of construction workforce over the Proposed Development build period and discussions with the Applicants. A profile of the anticipated daily workforce for each month through the construction period is provided in Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4). Combined HGV and construction worker movements during site preparation works and Tees/Outfall crossing works (including any spoil removal required) will be considerably lower than assessed for the peak of construction.

16.6.5 The standard construction working hours for the Proposed Development will be 07:00 to 19:00 Monday to Friday (except bank holidays) and 07:00 to 13:00 on Saturday. Key exceptions to these working hours could include activities that must continue beyond these hours and non-noisy activities with night working. HGV arrivals, including deliveries, will be managed as far as reasonably practicable, such that they are spread evenly over the day between the hours of 07:00 and 19:00. However, no HGV deliveries would be undertaken outside of core working hours, unless agreed with the relevant authority on a case by case basis.

16.6.6 Based on the methodology contained within Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4), the weekday construction worker shift associated with PCC Site is likely to generate 750 vehicular trips (one-way) per day during the peak of construction (Months 22 - 26) arriving at the main car park.

16.6.7 Use of HGVs for the import of modular plant and other containerised plant or equipment will be minimised by use of harbour facilities at RBT and Teesport where possible. HGVs delivering construction materials are assumed to access the PCC Site from Tees Dock Road via the A1053/A66/Tees Dock Road roundabout (see Figure 5-1, ES Volume II, Document Ref. 6.3). The volume of HGVs associated with the Proposed Development on the network is at its maximum of 80 two-way daily vehicle movements (40 in and 40 out) at the peak of construction in Months 22 - 26. Deliveries will be made between 07:00 and 19:00 hours. While HGV movements may be higher during the site clearance and enabling phase, overall traffic movements are considerably lower as the number of construction personnel accessing Site at the same time are considerably lower than during the peak of construction. The peak of construction (Months 22 – 26) therefore represents the worst case for the purposes of this assessment.

16.6.8 Based on the methodology contained within the Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4), the weekday worker shift associated with construction of the Natural Gas Connection the natural gas

(pipeline construction) to the south of the River Tees is likely to generate 60 vehicular trips (one-way) per day arriving at the main car park during the peak of construction (Months 22 - 26).

16.6.9 At the peak of construction (Month 22 - 26) it is expected there will be 5 HGV deliveries per day (10 HGV movements) associated with pipeline construction spread evenly over the working day. HGV deliveries associated with pipeline construction will go straight to the relevant compound.

16.6.10 A number of Abnormal Indivisible Load (AIL) movements are expected during the construction programme associated with the delivery of large items of plant and equipment. These will arrive at the Redcar Bulk Terminal and will be transported via the internal Teesworks road network to access the PCC Site. The nearest commercial port to the Proposed Development is Teesport. Detailed consideration will be given to the appropriate port and AIL routes during the FEED.

16.6.11 Table 16-13 summarises the expected profile of construction phase peak traffic levels arriving at the PCC Site (refer to Appendix 16A: Transport Assessment in ES Volume III, Document Ref. 6.4 for further details).

Table 16-13: Daily Construction Vehicle Profile (Peak Month of Construction)

Hour Beginning	Construction Worker Vehicles (Plant and Pipeline)		Plant Construction HGVs		Pipeline HGVs	
	Arrival	Departure	Arrival	Departure	Arrival	Departure
06:00	315	15	0	0	0	0
07:00	87	15	4	3	0	0
08:00	37	15	4	3	0	0
09:00	30	15	4	4	0	0
10:00	30	23	3	3	1	1
11:00	30	23	4	4	1	1
12:00	37	30	3	3	1	1
13:00	30	30	4	4	1	1
14:00	23	23	4	4	1	1
15:00	15	23	4	4	0	0
16:00	15	37	3	3	0	0
17:00	23	172	3	3	0	0
18:00	23	262	0	2	0	0
19:00	15	120	0	0	0	0
20:00	0	7	0	0	0	0
21:00	0	0	0	0	0	0
TOTAL	**810**	**810**	**40**	**40**	**5**	**5**

16.6.12 Based on the vehicle assignment contained within Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4), Table 16-14 summarises the likely changes in link flows within the Study Area for the assessment year 2024 peak of construction.

16.6.13 HGV traffic associated with the main plant has been assigned via Tees Dock Road. At the junction with the A66/A1053, it is assumed that 50% would continue west on the A66 and 50% would head south on the A1053 then west on the A174.

16.6.14 HGV traffic associated with the construction of the Natural Gas Connection (pipeline construction) would access the site via the A1085 / West Coatham Lane roundabout.

16.6.15 All pipeline HGV traffic has been assigned to/from the west via the A1085 Trunk Road. At the junction with the A1053/A1085, it is assumed that 50% would continue west on the A66 and 50% would head south on the A1053 then west on the A174.

16.6.16 Figure 16-2: HGV Routes to and from the Site (ES Volume II, Document Ref. 6.3) shows the proposed HGV routes.

16.6.17 The construction workers assignment has been based on the geographic split of population within a 45 minute drive time of the Proposed Development for permanent home based workers and a 30 minute drive time for transitory workers.

Table 16-14: 2024 Base + Committed and Proposed Peak Construction Development Two-Way AADT Traffic Flows

Link no.	Link Description	2024 Baseline Flow (inc. com dev)		Construction Traffic		Percentage Increase (%)	
		Total veh.	Total HGVs	Total veh.	Total HGVs	Total veh.	Total HGVs
1	A1085 Trunk Road (East of Site entrance)	15,773	1,497	411	0	2.6%	0.0%
2	A1085 Trunk Road (West of Site entrance)	22,674	2,811	1,219	10	5.4%	0.4%
3	A1042 Kirkleatham Lane	13,312	799	200	0	1.5%	0.0%
4	A1085 Trunk Road (South of British Steel Lackenby entrance)	24,425	3,582	1,219	10	5.0%	0.3%
5	A1085 Broadway	10,549	690	324	0	3.1%	0.0%
6	A66 (West of A1053)	26,786	5,181	846	45	3.2%	0.9%

Link no.	Link Description	2024 Baseline Flow (inc. com dev)		Construction Traffic		Percentage Increase (%)	
		Total veh.	Total HGVs	Total veh.	Total HGVs	Total veh.	Total HGVs
7	A1053 Greystone Road	21,566	2,759	129	45	0.6%	1.6%
8	B1380 High Street	10,934	1,003	44	0	0.4%	0.0%
9	A174 (West of Greystone roundabout)	36,445	2,684	85	45	0.2%	1.7%

16.6.18 The additional traffic due to the Proposed Development construction activities will result in some increases in traffic flows including HGVs on the observed roads leading to the Proposed Development.

16.6.19 In accordance with GEART, only those sensitive links that show a greater than 10% increase in total traffic flows (or HGV component) or, for all other links, a greater than 30% increase in total traffic or the HGV component are considered when assessing the traffic impacts upon receptors. It is noted that all of the links within the Study Area fall below the GEART screening thresholds however, the assessment uses the matrix provided in Table 16-3 to assess and confirm the transportation effects associated with construction traffic at the peak of construction.

Severance

16.6.20 The predicted change in total traffic associated with Proposed Development construction activities is considerably less than 30% on each link road (very low impact). Therefore, the severance effect would be minor (not significant) on the A1042 Kirkleatham Lane and negligible (not significant) on all other links.

Pedestrian Amenity

16.6.21 The change in total traffic (or HGV component) is considerably less than 50% on each link road (very low impact). Therefore, the effect for pedestrian amenity would be minor (not significant) on the A1042 Kirkleatham Lane and negligible (not significant) on all other links.

Fear and Intimidation

16.6.22 The change in total traffic is considerably less than 30% on each link road (very low impact). Therefore, the effect on fear and intimidation would be minor (not significant) on the A1042 Kirkleatham Lane and negligible (not significant) on all other links.

Highway Safety

16.6.23 Accident data for the most recent five years has been acquired for the study area and is summarised in Section 16.4. The statistics provide information on the location and severity of each Personal Injury Accident (PIA). Given that the level of increase in traffic flow resulting from the Proposed

Development on road links is negligible, the effect on highway safety is considered negligible (not significant).

Driver Delay

16.6.24 The performance of a junction is judged by the ratio of flow to capacity (RFC). As a general guide, a junction operating below a threshold of 0.85 is considered to operate within its design capacity. Junction modelling has been undertaken at the A1085 / West Coatham Lane / Main Site Access roundabout junction and the A1085 / A1053 roundabout junction, the results of which are provided in Appendix 16A: Transport Assessment (ES, Volume III) for the AM and PM peak hours (08:00 – 09:00 and 17:00 – 18:00). This demonstrates that both junctions would operate within their design capacity at the peak of construction in 2024. Junction modelling, therefore, indicates that the driver delay effect of the Proposed Development would be negligible (not significant).

16.6.25 Following a telephone call held with Highways England on the 21st December 2020, it was agreed that modelling of the A1053 / A174 / B1380 roundabout was not required as the number of construction vehicles passing through the junction during the AM and PM peak hours is less than 30 two-way vehicle movements.

Construction – Natural Gas Connection (North of the River Tees)

16.6.26 Traffic associated with the construction of the Natural Gas Connection to the north of the River Tees falls in the peak month of construction (Months 22 - 26) which is the 'worst case' for construction traffic.

16.6.27 The construction workforce is expected to total 120 workers who will travel directly to their relevant compound. HGV deliveries associated with pipeline construction will also head directly to the relevant compound.

16.6.28 It is anticipated that link roads including the A1046 Port Clarence Road, A178 Seaton Carew Road, B1275 Belasis Avenue, the A1185 and the unnamed road serving Seal Sands located to the north of the River Tees will be utilised by pipeline construction worker vehicles during Months 22 to 26 (Q3 / Q4 2024). To ensure a robust assessment of the likely impacts of pipeline construction traffic on all five link roads, it has been assumed that a maximum of 120 operatives engaged in pipeline construction would utilise each of the five link roads per day (i.e. 60 vehicle arrivals and departures). In terms of HGV movements, 5 HGVs per day (10 HGV movements) delivering consumable construction materials are expected along all five link roads.

16.6.29 Table 16-15 summarises the likely changes in link flows on the A1046 Port Clarence Road, A178 Seaton Carew Road, the unnamed road serving Seal Sands, the B1275 Belasis Avenue and the A1185 for the assessment year 2024.

Table 16-15: 2024 Base & Growth + Committed + Proposed Peak Pipeline Construction Development Two-Way Traffic flows

Link no.	Link Description	2024 Baseline Flow (inc. com dev)		Construction Traffic		Percentage Increase (%)	
		Total veh.	Total HGVs	Total veh.	Total HGVs	Total veh.	Total HGVs
10	A1046 Port Clarence Road	8,026	938	130	10	1.6%	1.1%
11	A178 Seaton Carew Road	8,361	1,170	130	10	1.6%	0.9%
12	Unnamed Road serving Seal Sands	4,406	901	130	10	3.0%	1.1%
13	B1275 Belasis Avenue	2,567	75	130	10	5.1%	13.3%
14	A1185 (west of A178 Seaton Carew Road)	5,919	1,075	130	10	2.2%	0.9%

16.6.30 The additional traffic due to the Proposed Development construction activities will result in some increases in traffic flows including HGVs on the observed roads leading to the Proposed Development.

16.6.31 In accordance with GEART, only those sensitive links that show a greater than 10% increase in total traffic flows (or HGV component) or, for all other links, a greater than 30% increase in total traffic or the HGV component are considered when assessing the traffic impact upon receptors.

16.6.32 It is noted that all of the links within the Study Area fall below the GEART screening thresholds however, the assessment has been completed using the matrix provided in Table 16-3 to assess and confirm the transportation effects associated with pipeline construction traffic at the peak of construction.

Severance

16.6.33 The predicted change in total traffic associated with pipeline construction activities is considerably less than 30% on each link road (very low impact). Therefore, the severance effect would be minor (not significant) on the A1046 Port Clarence Road and negligible (not significant) on all other links.

Pedestrian Amenity

16.6.34 The change in total traffic (or HGV component) is considerably less than 50% on each link road (very low impact). Therefore, the effect for pedestrian amenity would be minor (not significant) on the A1046 Port Clarence Road and negligible (not significant) on all other links.

Fear and Intimidation

16.6.35 The change in total traffic is considerably less than 30% on each link road (very low impact). Therefore, the effect on fear and intimidation would be minor (not significant) on the A1046 Port Clarence Road and negligible (not significant) on all other links.

Highway Safety

16.6.36 Accident data for the most recent five years has been acquired for the study area and is summarised in Section 16.4. The statistics provide information on the location and severity of each Personal Injury Accident (PIA). Given that the level of increase in traffic flow resulting from the Proposed Development on road links is negligible, the effect on highway safety is considered negligible (not significant).

Operational Phase

16.6.37 Once operational there could be a maximum of approximately 60 full-time staff working in three shifts (06:00 – 14:00 hours, 14:00 – 22:00 hours and 22:00 – 06:00 hours). In addition, there would be around 40 corporate staff based at the site working normal office hours (09:00 – 17:00 hours). Conservatively, assuming a car occupancy of 1.4, this equates to 71 cars per day (142 two-way vehicle movements).

16.6.38 In addition, there will be HGV traffic generated by deliveries of operational and maintenance plant and equipment. However, this is expected to equate to a maximum of four HGVs per day. Fuel for the new power station will be natural gas imported to the PCC via pipeline and there will be no vehicular movements associated directly with this. Small quantities of back-up diesel would be delivered by road if refilling of storage tanks was required.

16.6.39 With regard to the delivery and removal of hazardous loads associated with the PCC Site, the IEMA guidance notes that some developments may involve the transportation of dangerous or hazardous loads by road and that, where this is likely to occur, an ES should clearly outline the estimated number and composition of such loads. Where the number of movements is considered to be significant, a risk analysis is required to illustrate the potential for an accident to happen and the likely effect of such an event.

16.6.40 The full details for the expected hazardous substances and related quantities to be delivered and removed from the Proposed Development Site during the operational phase are not yet known but preliminary information has been compiled and it is estimated that there would be circa 1 HGV per day delivering chemicals and up to 5 HGV per day coming to remove waste (mainly acid wash effluent). On this basis the number of movements is not considered to be significant against the assessment screening criteria and based on the baseline road traffic volumes on the primary routes to Site no further assessment is required. Legal compliance measures are outlined in Section 16.5 to ensure the appropriate carriage of hazardous goods to and from the Site.

16.6.41 Routine maintenance will be undertaken annually with major overhauls occurring approximately once every five years. These maintenance activities will require around 200 additional contractors to work on site.

16.6.42 Due to the very low traffic flows which will result once the Proposed Development is first operational in 2026, the vehicle numbers generated will be significantly lower than experienced during the construction period. The overall effects during operation are therefore considered to be negligible adverse (not significant).

Decommissioning Phase

16.6.43 The activities involved in the decommissioning process for the proposed power plant are not yet known in detail, as it has a design life of 25 years. There would be expected to be some traffic movements associated with the removal (and recycling, as appropriate) of material arising from decommissioning and potentially the import of materials for land restoration and re-instatement. However, vehicle numbers are not expected to be any higher than those experienced during the construction period.

16.6.44 Current baseline data collected for the purposes of this assessment will not be valid at the year of decommissioning, which is currently unknown. However, as it is unlikely that baseline traffic figures on local roads will reduce appreciably over the next twenty-five years, it is considered that the percentage increase in traffic due to decommissioning would be negligible, and that overall the effects of decommissioning traffic would be no greater than that of the construction traffic. Notwithstanding, a Decommissioning Traffic Management Plan (DTMP) would be implemented during the decommissioning phase to control the impact and routing of HGVs. Effects are therefore assessed as likely to not be significant.

16.7 Mitigation and Enhancement Measures

16.7.1 No additional mitigation measures or enhancement measures other than those set out in Section 16.5 are considered necessary. However, the Contractors will review options for the use of rail and water transport when sourcing construction materials. The Contractors will also review the use of rail travel for construction staff accessing the site using the existing Redcar British Steel railway station (currently suspended).

16.8 Limitations or Difficulties

16.8.1 The assessment undertaken in this chapter is based on data and design information available at the time of assessment. No limitations or difficulties have been identified.

16.9 Cumulative Effects

16.9.1 The assessment presented in this Chapter and as outlined within Appendix 16A: Transport Assessment (ES Volume III, Document Ref. 6.4) inherently includes an assessment of construction related traffic cumulative effects with other shortlisted developments (see Section 16.4: Likely Impacts and Effects). In summary no significant cumulative effects are predicted. This is further described in Chapter 24: Cumulative and Combined Effects (ES Volume I, Document 6.2).

16.10 Residual Effects and Conclusions

16.10.1 In summary the residual effects are those predicted following consideration of any proposed mitigation measures. In line with the significance criteria presented earlier in this chapter all effects for the construction, operational and decommissioning phases are predicted to be negligible adverse (not significant).

16.10.2 The additional traffic due to Proposed Development construction activities would result in small, temporary increases of traffic flows, including HGVs, on the roads leading to the Site. In line with the significance criteria presented herein and in the TA in Appendix 16A (ES Volume III, Document Ref. 6.4), the effects of construction traffic on all road sections and junctions are anticipated to be negligible and thus not significant. Notwithstanding, a number of traffic management measures would be implemented during the Proposed Development construction phase to minimise traffic impacts upon the local road network (refer to Section 16.5).

16.10.3 The generation of traffic during Proposed Development operation would be minimal when compared to the construction phase. Therefore, Proposed Development operational phase traffic effects are also considered to be negligible (not significant).

16.10.4 The generation of traffic during the decommissioning phase is expected to involve traffic movements associated with the removal (and recycling, as appropriate) of material arising from demolition and potentially the import of materials for land restoration and re-instatement. However, the effects of decommissioning traffic would be no greater than that of the construction traffic and are, therefore, anticipated to be negligible (not significant)..

16.11 References

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