

CONTENTS

9.0	TRAFFIC AND TRANSPORT.....	9-1
9.1	Introduction	9-1
9.2	Legislation and Planning Policy Context.....	9-1
9.3	Assessment Methodology and Significance Criteria	9-5
9.4	Baseline Conditions	9-21
9.5	Development Design and Impact Avoidance	9-30
9.6	Likely Impacts and Effects	9-31
9.7	Mitigation and Enhancement Measures.....	9-46
9.8	Limitations or Difficulties	9-47
9.9	Residual Effects and Conclusions.....	9-47
9.10	References	9-47

TABLES

Table 9.1: Sensitivity of receptors.....	9-6
Table 9.2: Traffic and transport assessment framework.....	9-10
Table 9.3: Consultation summary.....	9-12
Table 9.4: 2018 baseline traffic flows.....	9-22
Table 9.5: Summary of recorded accidents 1st January 2014 to 31st December 2018.....	9-23
Table 9.6: TEMPRO traffic growth factors (average day)	9-24
Table 9.7: Future baseline traffic flows (24 Hour AADT) relevant to construction starting Q2 2020.....	9-24
Table 9.8: Future baseline traffic flows (24 Hour AADT) relevant to construction starting Q3 2021	9-25
Table 9.9: Future baseline traffic flows (24 Hour AADT) relevant to construction starting Q3 2026.....	9-25
Table 9.10: Committed development flows (24 hour AADT) relevant to construction starting Q2 2020	9-26
Table 9.11: Committed development flows (24 hour AADT) relevant to construction starting Q3 2021	9-27
Table 9.12: Committed development flows (24 hour AADT) relevant to construction starting Q3 2026	9-27
Table 9.13: Future baseline traffic flows including committed development (24 hour AADT) relevant to construction starting in Q2 2020.....	9-28
Table 9.14: Future baseline traffic flows including committed development (24 hour AADT) relevant to construction starting in Q3 2021	9-29
Table 9.15: Future baseline traffic flows including committed development (24 hour AADT) relevant to construction starting in Q3 2026.....	9-29
Table 9.16: Daily construction vehicle profile (Construction peak)	9-32

Table 9.17: 2021 base + committed development + construction traffic (24hr AADT)	9-33
Table 9.18: 2022 base + committed development + construction traffic (24hr AADT)	9-34
Table 9.19: 2027 base + committed development + construction traffic (24hr AADT)	9-35
Table 9.20: Daily operational vehicle profile	9-38
Table 9.21: 2023 base + committed development + operational traffic (24hr AADT)	9-39
Table 9.22: 2024 base + committed development + operational traffic (24hr AADT)	9-39
Table 9.23: 2029 base + committed development + operational traffic (24hr AADT)	9-40

9.0 TRAFFIC AND TRANSPORT

9.1 Introduction

- 9.1.1 This chapter of the Environmental Statement (ES) addresses the potential effects of the Proposed Development on traffic and transport during construction, operation (including maintenance) and decommissioning.
- 9.1.2 This chapter is supported by a Transport Assessment (TA) presented within Appendix 9A in ES Volume III (Document Ref. 6.4).

9.2 Legislation and Planning Policy Context

Overarching National Policy Statement for Energy (NPS EN-1)

- 9.2.1 The National Policy Statement (NPS) EN-1 was published in 2011 (Department for Energy and Climate Change (DECC), 2011). Section 5.13 outlines the planning policy for traffic and transport, including guidance on traffic and transport assessment as part the Environmental Impact Assessment (EIA). The most relevant paragraphs for this TA are paragraphs 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.”

- 9.2.2 In terms of decision making, Section 5.13 of the NPS states that the Infrastructure Planning Commission (now 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 nationally significant infrastructure project. Where the proposed mitigation measures are insufficient to reduce the impact on the transport infrastructure to acceptable levels, the Secretary of State should consider requirements to mitigate the adverse impacts on transport networks arising from the development and could include:

- demand management measures;
- water-borne or rail transport, where cost effective; and
- attaching requirements to a development consent order where there is likely to be substantial HGV traffic.

National Policy Statement for Renewable Energy Infrastructure (NPS EN-3)

- 9.2.3 The National Policy Statement (NPS) EN-3 (Department for Energy and Climate Change (DECC), 2011a) was published in 2011. The most relevant paragraphs for the TA are paragraphs 2.5.24 to 2.5.25 which state:

“2.5.24 Biomass or EfW generating stations are likely to generate considerable transport movements. For example, a biomass or EfW plant that uses 500,000 tonnes of fuel per annum might require a large number of heavy goods vehicle (HGV) movements per day to import the fuel. There will also be residues which will need to be regularly transported off site.

2.5.25 Government policy encourages multi-modal transport and the IPC should expect materials (fuel and residues) to be transported by water or rail routes where possible. Applicants should locate new biomass or waste combustion 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 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. Therefore, any application should 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 will need to be satisfied that the impacts of the new infrastructure are acceptable as set out in Section 5.13 of EN-1.”

National Planning Policy Framework (July 2019)

- 9.2.4 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) sets out the Government’s planning policies for England.
- 9.2.5 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 movements are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised.
- 9.2.6 The NPPF recommends that a Transport Statement (TS) or TA should support all developments that generate significant amounts of movement and that development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

Local Planning Policy

North East Lincolnshire Local Plan 2013 to 2032 (adopted 2018)

- 9.2.7 The Local Plan was adopted by NELC in March 2018 and sets out the vision and objectives for the authority, allocates sites for housing, employment and other forms of development and sets out policies.
- 9.2.8 Key transport related policies relevant to the Proposed Development that form part of the Local Plan are summarised below.

Policy 36: Promoting Sustainable Transport

9.2.9 Policy 36 states that *“to reduce congestion, improve environmental quality and encourage more active and healthy lifestyles, the Council will support measures that promote more sustainable transport choices.”* The policy states that where appropriate, proposals should seek to:

- focus development which generates significant movements in locations where the need to travel will be minimised;
- prioritise pedestrian and cycle access to and within the site;
- make appropriate provision for access to public transport and other alternative means of transport to the car, adopting a 400 m walk to bus stop standard;
- make suitable provision to accommodate the efficient delivery of goods and supplies; and
- make suitable provision for electric vehicle charging, car clubs and car sharing when considering car park provision.

9.2.10 The policy goes on to state that *“planning permission will be granted where any development that is expected to have significant transport implications delivers necessary and cost effective mitigation measures to ensure that development has an acceptable impact on the network’s functioning and safety.”*

9.2.11 The policy also states that *“where appropriate, Transport Statements, Transport Assessments and/ or Travel Plans should be submitted with applications with the precise form being dependent on the scale and nature of development and agreed through early discussion with the Council”.*

Policy 38: Parking

9.2.12 Policy 38 states that *“Development proposals that generate additional parking demand should ensure that appropriate vehicle, powered two-wheeler and cycle parking provision is made. The form and scale of off-street parking required will be assessed against the following:*

- *the accessibility of the development;*
- *the type, mix and use of the development;*
- *the availability and frequency of public transport services; and*
- *local car ownership levels.”*

9.2.13 The policy states that developers should consider and incorporate measures to minimise parking provision without causing a detrimental impact to the functioning of the local highway network.

9.2.14 The policy goes on to state that at least 5% of parking bays should be allocated for people with mobility impairments.

North East Lincolnshire Local Transport Plan (2016 – 2032)

9.2.15 North East Lincolnshire’s Local Transport Plan sets out a programme for a wide range of improvements to local transport over the period 2016 to 2032 (NELC, 2016). The objectives of the plan include:

- enable sustainable growth through effective transport provision;
- improve journey times and reliability by reducing congestion;
- support regeneration and employment by connecting people to education, training and jobs;
- enable disadvantaged groups or people living in disadvantaged areas to connect with employment, healthcare, social and leisure opportunities;
- improve the health of individuals by encouraging and enabling more physically active travel;
- provide safe access and reduce the risk of loss, death or injury due to transport collisions or crime;
- improve the journey experience on the local transport network; and
- ensure that transport contributes to environmental excellence, including managing air quality and reducing transport-related greenhouse gas emissions.

9.2.16 Major local highways and transport improvement schemes within the immediate area to the Site include the South Humber Bank Link Road which received planning permission in September 2018 and is scheduled for completion in September 2020.

Other Guidance

Planning Practice Guidance

9.2.17 Planning Practice Guidance titled 'Travel plans, transport assessments and statements in decision taking' was published in March 2014 on the Government planning guidance planning portal (DCLG, 2014) and has been used to inform the TA.

Guidelines for Environmental Assessment of Road Traffic

9.2.18 The 'Guidelines for the Environmental Assessment of Road Traffic' 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

9.2.19 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

9.2.20 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.

9.3 Assessment Methodology and Significance Criteria

9.3.1 The environmental impact of the Proposed Development generated traffic has been assessed with reference to the 'Guidelines for the Environmental Assessment of Road Traffic' published by the IEA (1993). In accordance with guidance noted in Section 9.2 above, issues including severance, driver delay, pedestrian amenity and delay, accidents and safety associated with the Proposed Development have been investigated and are reported below.

9.3.2 Any likely significant environmental effects relating to air pollution and noise and vibration, generated by traffic from the Proposed Development are considered respectively in Chapter 7: Air Quality and Chapter 8: Noise and Vibration of this ES.

Extent of Study Area

9.3.3 The Study Area scope of this assessment has been defined by reference to the 'Guidelines for the Environmental Assessment of Road Traffic' (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 Heavy Goods Vehicles (HGVs) 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%.

9.3.4 To define the study area a network of road links has been identified based on the assignment of construction and operational traffic to the road network 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 on Figure 3.2 in Appendix 9A (ES Volume III (Document Ref. 6.4)):

- South Marsh Road (East of Hobson Way);
- South Marsh Road (West of Hobson Way);
- South Humber Bank Link Road (South of South Marsh Road);
- Hobson Way (North of South Marsh Road);
- Kiln Lane;
- A1173 (West of North Moss Lane); and
- A1173 (North of A180).

9.3.5 This Study Area was agreed with North East Lincolnshire Council (NELC) and Highways England (HE) through the TA scoping process for the Consented Development in 2018. A copy of the TA scoping correspondence received from NELC and HE officers is included in Annex 1 of the TA in Appendix 9A (ES Volume III, Document Ref. 6.4). The level of traffic that will be generated and the designated route for HGV traffic (which was agreed with NELC for the Consented

Development and requires HGVs to route to/ from the Proposed Development using the strategic and principal road network avoiding the use of minor local roads) will be the same for either the Consented Development or the Proposed Development, so the same Study Area is considered to be appropriate for the Proposed Development TA. A further scoping exercise was undertaken with NELC and HE via email to agree the parameters of the TA for the Proposed Development whereby the Study Area was agreed (see Annex 1 of the TA included in Appendix 9A, ES Volume III (Document Ref. 6.4)).

Sensitivity of Receptors

- 9.3.6 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 will include the elderly and children. It is also necessary to consider footpath and cycle route networks that cross the roads within the Study Area.
- 9.3.7 A desktop exercise has been undertaken to classify the sensitivity of the routes within the Study Area. Table 9.1 below identifies the links, the assigned sensitivity rating and the justification:

Table 9.1: Sensitivity of receptors

LINK NO.	LINK DESCRIPTION	LINK SENSITIVITY	RATIONALE
1	South Marsh Road (East of Hobson Way)	Low	South Marsh Road is a 6.75 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. Any frontage development is industrial in nature. Given there are no pedestrian facilities along the road, the lack of origins and destinations within a 2 km walking catchment and no bus stops in the vicinity, it is considered that pedestrian movements on this section of South Marsh Road would be minimal. The road is promoted as a leisure cycle route (known as Fishermen and Ships) by NELC.
2	South Marsh Road (West of Hobson Way)	Low	The road is a single lane carriageway for the majority of the route with passing places provided between Hobson Way and North Moss Lane. The road passes through open country. There are no pedestrian facilities along the road. The road is promoted as a leisure cycle route (known as Fishermen and Ships) by NELC.
3	South Humber Bank Link	Low	The new Link Road is currently under construction and is proposed to be 8.3 m wide with a speed limit of

LINK NO.	LINK DESCRIPTION	LINK SENSITIVITY	RATIONALE
	Road (South of South Marsh Road)		40 mph. The development proposals include a 3 m wide shared footway/ cycle way on the northern side of the carriageway.
4	Hobson Way (North of South Marsh Road)	Low	Hobson Way is a 7.3 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. A pedestrian footway is provided along the western side of the carriageway between Hobson Way and Kiln Lane. Any frontage development is industrial in nature.
5	Kiln Lane	Low	Kiln Lane is a 7.3 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. Kiln Lane provides access to a number of industrial units which are located along its frontage. A pedestrian footway is provided along the southern side of the carriageway between Hobson Way and the railway level crossing.
6	A1173 (West of North Moss Lane)	Very Low	The A1173 is a 7.3 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit. There are no pedestrian footways along the road. Any frontage development is industrial in nature.
7	A1173 (North of A180)	Very Low	The A1173 between the A180 and the first roundabout passes through open county. It is a 7.3 m wide single carriageway road and is subject to the 60 mph national speed limit for single carriageway roads. There are no pedestrian footways along the road.

9.3.8 Traffic impacts on the A180 have not been assessed due to development traffic representing a very low percentage of total traffic on the A180, which does not trigger the rule threshold guidelines. There are also no sensitive receptors along the A180 in the vicinity of the Study Area (i.e. to the north of the A180 Stallingborough Interchange and to the south between the A1173/ A180 Stallingborough Interchange junction and the A180/ Moody Lane/ Pyewipe Road (Westgate Roundabout)).

Assessment Scenarios and Parameters

- 9.3.9 The IEA assessment guidelines document (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.
- 9.3.10 As described in Chapter 5: Construction Programme and Management, there are a number of possible construction programme scenarios for the Proposed Development. The most likely construction programme is currently anticipated to be the construction of the Consented Development pursuant to the Planning Permission starting in Quarter 2 (Q2) 2020 and taking approximately three years to complete, with the Additional Works also being constructed within the same construction period, following the grant of the Development Consent Order (DCO) (potentially beginning in Q3 2021, approximately half way through the construction programme for the Consented Development).
- 9.3.11 The other potential construction programme scenarios that are considered for the purposes of the EIA are:
- construction of the Proposed Development in a single circa three year construction phase commencing shortly after the DCO is awarded in Q3 2021 (with no construction pursuant to the Planning Permission); or
 - construction of the Proposed Development in a single circa three-year construction phase commencing up to five years after the DCO is awarded, in Q3 2026 (again, with no construction pursuant to the Planning Permission).
- 9.3.12 For the purposes of the TA (in terms of highway/ junction capacity), the worst case scenario would be the latest construction start date (2026) because baseline traffic flows would be higher. However, for the purposes of this ES, all three construction scenarios have been assessed for completeness.
- 9.3.13 The assessment scenarios are therefore:
- Construction – assuming for assessment purposes that construction starts in either Q2 2020, Q3 2021 or Q3 2026; and
 - Opening (start of Operation) – assuming for TA purposes that operation commences in either Q2 2023, Q3 2024 or Q3 2029.
- 9.3.14 Decommissioning has also been considered as part of the assessment.
- 9.3.15 A number of worst case development parameters are assessed in terms of operational traffic, namely an average fuel net calorific value (NCV) at the lowest end of the operational range (9 MJ/kg) for the expected plant annual running hours, resulting in a maximum annual fuel throughput of 753,500 tonnes, and an average HGV payload of 16 tonnes.
- 9.3.16 In addition, although 24 hour operational fuel deliveries are proposed, it is assumed for the purposes of the traffic and transport assessment that all deliveries are between 06:00 and 18:00, to provide a worst case in terms of peak hourly traffic flows.

Assessment of Severance

- 9.3.17 Severance occurs in a community when a major road 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 and motorists.
- 9.3.18 The Guidelines (IEA, 1993) suggest that changes in total traffic flow of 30%, 60% and 90% will result in slight, moderate and substantial changes in severance respectively.

Assessment of Pedestrian Amenity

- 9.3.19 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 exposure to vehicle emissions.
- 9.3.20 The Guidelines (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.

Assessment of Fear and Intimidation

- 9.3.21 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 guidance, this report considers that changes in total traffic flow of 30%, 60% and 90% are considered to result in slight, moderate or substantial impacts.

Assessment of Highway Safety

- 9.3.22 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 have the potential to have an effect on the collision rates.
- 9.3.23 Recent collision statistics on routes within the Study Area have been examined to highlight any hotspots that need further consideration.

Assessment of Driver Delay

- 9.3.24 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.

Significance Criteria

- 9.3.25 Using the information set out above, the magnitude of impacts is defined as set out in Table 9.2.

Table 9.2: Traffic and transport assessment framework

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% to 60%	Change in total traffic flow of 60% to 90%	Change in total traffic flow of >90%
Pedestrian Amenity	Change in traffic flow (or HGV component) <50%	Change in traffic flow (or HGV component) of 51% to 100%	Change 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% to 60%	Change in total traffic flow of 60% to 90%	Change in total traffic flow of >90%
Highway Safety	Magnitude of impact derived using professional judgement informed by the frequency and severity of 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.			

9.3.26 The effects are classified by combining the receptor sensitivity with the magnitude of impact using the assessment matrix as outlined in Chapter 2: Assessment Methodology.

Sources of Information/ Data

9.3.27 As set out in further detail in the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)), a series of 7-day automated traffic counts (ATCs) were undertaken in June 2018 and September 2018 at the following locations to provide a baseline for comparison on the following roads:

- South Marsh Road (East of Hobson Way);
- South Marsh Road (West of Hobson Way);
- Hobson Way (North of South Marsh Road);
- Kiln Lane (West of Hobson Way);
- A1173 (West of North Moss Lane); and
- A1173 (North of A180).

9.3.28 In addition to the ATC counts, the impact of the Proposed Development has been examined at the following junctions on the local highway network for the overall network morning (AM) and evening (PM) peak hours:

- South Marsh Road/ Hobson Way;

- Hobson Way/ Laporte Road/ Kiln Lane;
- Kiln Lane/ North Moss Lane/ Trondheim Way;
- A1173/ Kiln Lane;
- A1173 / SHIIP Site Access;
- A1173/ A180 Stallingborough Interchange;
- A180/ Moody Lane/ Pyewipe Road (Westgate Roundabout); and
- A180/ Estate Road / Gilbey Road (Pyewipe Roundabout).

9.3.29 The junction counts were undertaken on Thursday 7th June 2018 apart from the A1173/ A180 Stallingborough Interchange which was undertaken on Wednesday 5th July 2017, Pyewipe Roundabout which was undertaken on Thursday 6th July 2017 and the Kiln Lane/ North Moss Lane/ Trondheim Way Roundabout and the Westgate Roundabout which were undertaken on Thursday 11th October 2018. The surveys were undertaken between 07:00 and 10:00 and 16:00 and 19:00 hours.

9.3.30 As the traffic data is less than three years old, the data is valid for the purposes of assessment. This was agreed with NELC and HE during the TA scoping exercise.

Consultation

9.3.31 A summary of the consultation responses specific to traffic and transport that have been received is provided in Table 9.3 below. This includes consultation that was undertaken on the Consented Development, which is considered to be relevant given that the Proposed Development would result in no changes in terms of traffic generation or HGV routing to the Consented Development.

9.3.32 In its consultation response to PINS on the Proposed Development EIA Scoping Report, NELC confirmed that the EIA Scoping Report captured the relevant information that it had requested in the scoping opinion for the Consented Development and that NELC had no further comments

Table 9.3: Consultation summary

CONSULTEE	DATE (METHOD OF CONSULTATION)	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
Consented Development Consultation Summary			
Highways England	July 2018 (formal response to Consented Development EIA Scoping Report)	It is noted that no junctions on the Strategic Road Network (SRN) have been included within the Study Area, and as such, justification is required as to this omission.	An existing count has been obtained for the A180 Stallingborough Interchange dated July 2017.
		Given that the EIA identifies that the SRN needs to be considered during the construction and operation phases, the SRN should be considered within the Study Area.	This is noted. Full details provided within the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)).
		More precise information on construction traffic and operational traffic will be required within the TA.	This is noted. Full details provided within the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)).
		The TA should pay due cognisance to the requirements of Circular 02/2013.	This is noted and referenced in the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)).

CONSULTEE	DATE (METHOD OF CONSULTATION)	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
		It is considered that the proposed link road – Planning application reference: DM/0094/18/FUL – from Hobson Way to Moody Lane should be considered within the Study Area as the link road will impact upon the distribution of trips to and from the development proposals.	The South Humber Bank Link Road TA prepared by Atkins in January 2018 stated that the Link Road will result in a redistribution of trips to/ from the areas at either end of the proposed Link Road. The effect of the proposed Link Road would be additional road capacity at the A180/ A1173 interchange. As the Link Road is expected to open in September 2020, traffic impact analysis with the Link Road open has been included in the TA (Appendix 9A in the ES Volume III (Document Ref. 6.4)).
Highways England	September 2018 (email response to TA scoping report for the Consented Development)	A 2028 assessment year should be provided for completeness.	A future Operation scenario is included in the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)) but not in the Traffic and Transport chapter as the Opening year is considered to be the worst case for EIA. This is due to lower baseline flows in the Opening year when compared to the future Operation year so the Proposed Development traffic represents a higher percentage impact in the Opening year compared to the future Operation year.
		Committed development information should be provided through liaison with the local planning authority.	This is noted. The list of cumulative developments has been reviewed and updated where required within the ES since the preparation of the PEI Report, following consultation with NELC.
North East Lincolnshire Council	September 2018 (email response to TA scoping report	We would expect the Transport Assessment to be structured in the following way: Executive Summary;	This is noted. Full details provided within the TA (presented within Appendix 9A in ES Volume III (Document Ref. 6.4)).

CONSULTEE	DATE (METHOD OF CONSULTATION)	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
	for the Consented Development)	Introduction; Policy Context; Baseline Data; Details of Construction; Trip Generation; Impacts; Proposed Mitigation; Summary and Conclusions	
		Junction capacity analysis is also required at Kiln Lane/ North Moss Lane/ Trondheim Way roundabout and A180/ Moody Lane/ Pyewipe Road roundabout.	Counts were commissioned at these junctions. Analysis is provided within the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)).
		A Travel Plan will be required to be submitted as part of the planning application.	A Framework Operational Travel Plan has been prepared and included (see Annex 7 of the TA in Appendix 9A, ES Volume III (Document Ref. 6.4)).
		Due to the number of construction workers required at the site, we would also request a Construction Travel Plan to deal with how staff are going to travel to site during the construction phases	A Framework Construction Travel Plan has been prepared and included (see Annex 27 of the TA in Appendix 9A, ES Volume III (Document Ref. 6.4)).
		A Construction Management Plan will be required to detail how traffic will be managed during the construction phase. A draft should be submitted as	A Framework Construction Traffic Management Plan has been prepared and included (see Annex 28 of the TA in Appendix 9A, ES Volume III (Document Ref. 6.4)).

CONSULTEE	DATE (METHOD OF CONSULTATION)	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
		<p>part of the planning application submission.</p> <p>A Delivery and Servicing Plan will be required to demonstrate how deliveries and servicing will be managed. This should include (but not be limited to) details of banksmen requirements, scheduling to ensure that vehicles are not left waiting on the highway, time restrictions etc. A Draft should be submitted as part of the planning application submission.</p>	<p>A Delivery and Servicing Plan has been prepared and included (see Annex 26 of the TA in Appendix 9A, ES Volume III (Document Ref. 6.4)).</p>
<p>North East Lincolnshire Council</p>	<p>February 2019 (response to submitted TA for Consented Development)</p>	<p>Highways Officers note that the SHIIP site access (a new roundabout on the A1173) has not been included within the junction modelling.</p> <p>Highways Officers query why the Pyewipe Roundabout (A180/ Estate Rd No 1/ Gilbey Rd/ Estate Rd No 2) has not been modelled.</p>	<p>This is noted. Full details provided within the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)).</p> <p>The Transport Assessment considered the Westgate Roundabout which is in close proximity to the Pyewipe Roundabout. Analysis showed that development traffic as a percentage of total traffic at the Westgate Roundabout is likely to be in the order of 1.5% - 1.6% in the AM Peak hour and 0.5% - 0.6% during the PM Peak hour in future years. The percentage impact at the Pyewipe</p>

CONSULTEE	DATE (METHOD OF CONSULTATION)	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
			Roundabout would therefore be similar and not material.
Proposed Development Consultation Summary			
Planning Inspectorate	(EIA Scoping Opinion for Proposed Development) October 2019	The ES should provide a clear justification as to why the study area chosen is sufficient to address the extent of the likely impacts resulting from the Proposed Development.	Evidence is provided within Section 9.3 of this Chapter which outlines which road links trigger the rule threshold guidelines.
		The ES must consider the individual impacts considered (such as severance or driver delay) in addition to changes in traffic flow.	Assessment of individual impacts (including severance, driver delay and changes in traffic flow) is provided in Section 9.6 of this Chapter.
		The ES should explain how many vehicle movements are expected to be generated during operation both from staff travelling to and from the development site and from likely maintenance operations and assess impacts where a likely significant effect may occur.	Full details of vehicle movements are provided within the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)) and summarised in this Chapter.
		The Scoping Report states that no additional baseline surveys	Base traffic flows have been updated using the traffic count data collected in 2018. Full details are

CONSULTEE	DATE (METHOD OF CONSULTATION)	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
		<p>are expected to be required but does not explain how the baseline would be updated. The ES should explain how any updates to the baseline have been derived.</p> <p>The updated TA should include an assessment of the impact on the operational railway and level crossing on South Marsh Road, as advised by Network Rail.</p>	<p>provided within the TA (Appendix 9A in ES Report Volume III, Document Ref. 6.4).</p> <p>An assessment of impacts on the railway and level crossing on South Marsh Road is provided within the TA (Appendix 9A in ES Report Volume III, Document Ref. 6.4).</p>
North East Lincolnshire Council	November 2019 (email response to TA scoping report for the DCO application)	Please include Pyewipe and Lockhill roundabouts in baseline traffic data collection. Whilst it is acknowledged that in your previous scoping this was missed, this is a new scope and must be included.	Based on the proposed assignment of operational traffic to the network (with the Link Road open), the Proposed Development will generate 40 trips in the AM Peak and 13 trips in the PM Peak at the Pyewipe Roundabout. As the trips in the AM Peak exceed the 30 two-way trip threshold for junction assessment, Pyewipe Roundabout has been included for assessment. Based on the proposed assignment of construction traffic to the network (with the Link Road open), the Proposed Development will generate 29 trips in the AM Peak and 19 trips in the PM peak at the peak of construction. As these trips are below the 30 two-way trip threshold for assessment, no junction assessment is required at Pyewipe Roundabout for the construction period of the Proposed Development.

CONSULTEE	DATE (METHOD OF CONSULTATION)	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
			<p>At the Lockhill Roundabout the Proposed Development will generate only 28 trips in the AM Peak and 10 trips in the PM Peak during operation and 15 trips in the AM Peak and 10 trips in the PM Peak at the peak of construction. These trips are below the threshold for junction assessment and therefore assessment of the Lockhill roundabout is not considered necessary.</p>
		<p>Consideration should be given to the distribution of traffic post Link Road completion.</p>	<p>The redistribution of trips associated with the South Humber Bank Link Road have been obtained from the TA prepared by Atkins in January 2018 and applied to future year baseline flows (see Appendix 9A in ES Volume III (Document Ref. 6.4)).</p>
		<p>Please include Pyewipe and Lockhill roundabouts in Junction Capacity Assessment.</p>	<p>The Proposed Development (with the Link Road open) will generate 40 two-way trips in the AM Peak hour at Pyewipe Roundabout so this is included in the Junction Capacity Assessment. No assessment is undertaken for the construction period of the Proposed Development as peak hour trips fall below the 30 two-way trip threshold for assessment.</p> <p>In terms of the Lockhill Roundabout, the Proposed Development will generate less than 30 two-way trips in the AM and PM peak hours during both construction and operation and therefore modelling of this junction is not considered necessary.</p>

CONSULTEE	DATE (METHOD OF CONSULTATION)	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
		Please include the scenarios in which completion would be 2024 in Junction Capacity Assessment.	Full details are provided within the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)).
		Will there really be no change or addition of further materials or resources required during construction?	The Rochdale envelope (maximum development parameters) assessed for the Consented Development also apply to the Proposed Development, so there is no change to the previous worst case assumptions on construction workforce and HGV traffic.
		Assignment of construction vehicles may vary dependent on availability of link road currently scheduled for completion September 2020.	The assignment of construction worker vehicles includes for the opening of the link road. HGVs will be required to use the designated route to the site via the A180 Stallingborough Interchange, A1173, Kiln Lane, Hobson Way and South Marsh Road.
		Would the peak of construction be 2022 for the scenario in which completion would be 2024? Could this be included?	Yes, the peak of construction would be 2022. Traffic impact analysis has been undertaken for 2022 and is included within the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)).
Highways England	2nd December 2019 (email response to TA scoping for the Proposed Development)	Noted the range of scenarios but sought clarity required on whether there would be overlap between construction phases.	There will be no overlap of construction phases for the range of scenarios. This is outlined within the TA (Appendix 9A in ES Volume III (Document Ref. 6.4))
		Information from fuel suppliers should be used to inform trip distribution at the SRN.	As the origin of fuel deliveries is still to be confirmed for the purposes of the TA a 50/50 HGV has been assumed for the purposes of the assessment.

CONSULTEE	DATE (METHOD OF CONSULTATION)	SUMMARY OF CONSULTEE COMMENTS	SUMMARY OF RESPONSE/ HOW COMMENTS HAVE BEEN ADDRESSED
		The TA needs to be compliant with Circular 02/2013	This is noted and referenced in the TA presented within Appendix 9A in ES Volume III (Document Ref. 6.4)).

9.4 Baseline Conditions

Site Location

- 9.4.1 The Proposed Development is located approximately 3 km north-east of the A180 Stallingborough Interchange which connects to the A1173.
- 9.4.2 The A1173 runs north-south linking to the A180 Stallingborough Interchange to the south at a grade separated roundabout and the A1173/ Kiln Lane roundabout to the north. As described in Table 9.1, this section of the A1173 is a 7.3 m wide single carriageway road and is subject to the national speed limit.
- 9.4.3 At the A1173/ Kiln Lane roundabout, the A1173 heads north towards Immingham and Kiln Lane continues east. As described in Table 9.1, Kiln Lane is a 7.3 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit and provides access to a number of industrial units.
- 9.4.4 Continuing approximately 1.8 km east along Kiln Lane, the road connects with Hobson Way and Laporte Road at a four arm standard roundabout. Continuing south along Hobson Way, the single carriageway road is subject to a 40 mph speed limit. The road is street lit and a pedestrian footway is provided along the western side of the carriageway.
- 9.4.5 Continuing south along Hobson Way, the road connects with South Marsh Road approximately 1.2 km south of Kiln Lane at a three arm priority T-junction. Access to the Proposed Development is proposed from South Marsh Road which also provides highway access to the existing South Humber Bank Power Station, Synthomer (UK) Limited, the NEWLINCS Integrated Waste Management Facility and Environment Agency access to sections of the Humber Estuary flood defence. South Marsh Road is a 6.75 m wide single carriageway road which is street lit and is subject to a 40 mph speed limit.

Existing Traffic Flows

- 9.4.6 As described in Section 9.3, the following highway links form the highway network of interest (the Study Area) for this assessment:
- South Marsh Road (East of Hobson Way);
 - South Marsh Road (West of Hobson Way);
 - South Humber Bank Link Road (South of South Marsh Road);
 - Hobson Way (North of South Marsh Road);
 - Kiln Lane (West of Hobson Way);
 - A1173 (West of North Moss Lane); and
 - A1173 (North of A180).
- 9.4.7 Baseline 24 hour annual average daily traffic (AADT) two-way link flows for the Study Area are provided in Table 9.4. Further details of the baseline traffic data are provided in the TA at Appendix 9A in ES Volume III (Document Ref. 6.4).

Table 9.4: 2018 baseline traffic flows

LINK NO.	LOCATION	TOTAL VEHICLES	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	790	208
2	South Marsh Road (West of Hobson Way)	781	56
3**	South Humber Bank Link Road (South of South Marsh Road)	n/a	n/a
4	Hobson Way (North of South Marsh Road)	1,220	256
5	Kiln Lane (West of Hobson Way)	2,854	1,005
6	A1173 (West of North Moss Lane)	8,997	2,537
7	A1173 (North of A180)	14,197	2,644

*** Link Road due to open in 2020*

Baseline Accident Record

- 9.4.8 Personal Injury Accident (PIA) data has been obtained from the Crashmap website for the period 1st January 2014 to 31st December 2018 for the Study Area, which includes A180/ A1173 interchange, A1173, Kiln Lane, Hobson Way and South Marsh Road and the A180 Westgate and Pyewipe Roundabouts.
- 9.4.9 In total, 12 accidents were recorded between the A180/ A1173 Interchange and South Marsh Road of which eight were recorded as 'Slight' and four as 'Serious'. Table 9.5 summarises the accidents that have occurred over the specific period.

Table 9.5: Summary of recorded accidents 1st January 2014 to 31st December 2018

LOCATION	ACCIDENT SEVERITY			
	Slight	Serious	Fatal	Total
A180/ A1173 Stallingborough Interchange	4	1	0	5
A1173 Corridor	0	1	0	1
A1173/ Kiln Lane Roundabout	1	0	0	1
Kiln Lane Corridor	2	1	0	3
Kiln Lane/ Hobson Way/ Laporte Road Roundabout	1	0	0	1
Hobson Way Corridor	0	1	0	1
South Marsh Road	0	0	0	0

9.4.10 In total, 25 accidents were recorded at the A180 Westgate Roundabout of which 24 were recorded as ‘Slight’ and one as ‘Serious’.

9.4.11 In total, 16 accidents were recorded at the A180 Pyewipe Roundabout, of which 14 were recorded as ‘Slight’ and 2 as ‘Serious’.

9.4.12 As can be seen in Table 9.5, the local highway network in the vicinity of the Site has a low accident record.

9.4.13 In summary the cause of the majority of accidents within the Study Area was driver error due to lack of awareness or loss of control as opposed to any deficiencies on the road links or design of the junctions.

Future Baseline

9.4.14 As described at paragraphs 9.3.12 to 9.3.13 above, three potential construction programme scenarios have been assessed – construction starting in Q2 2020, construction starting in Q3 2021 and construction starting in Q3 2026. Future year baseline traffic flows for the assessment years of 2021, 2022 and 2027 (the peaks of construction relevant to the three construction programme assessment scenarios) and 2023, 2024 and 2029 (the three potential Opening years) have been derived by applying the standard Trip End Model Presentation Program (TEMPRO) to the above flows and are indicated in Table 9.6. These growth factors have been applied to the baseline to derive the future baseline flows presented in Table 9.7.

Table 9.6: TEMPRO traffic growth factors (average day)

YEAR	ROAD TYPE	GROWTH FACTOR
2018 – 2021 (Peak of Construction)	Principal	1.0405
2018 – 2023 (Opening Year)	Principal	1.0680
2018 – 2027 (Peak of Construction)	Principal	1.1115
2018 – 2029 (Opening Year)	Principal	1.1273

- 9.4.15 The proposed Link Road is due to open in September 2020 and will result in the re-distribution of existing traffic flows within the Study Area.
- 9.4.16 The proposed changes to link flows within the Study Area have been obtained from Appendix D of the South Humber Bank Link Road TA prepared by Atkins in January 2018. The re-assignment of traffic as a result of the Link Road opening shows proposed increases in traffic on Hobson Way and Kiln Lane and a reduction in traffic flow on the A1173.
- 9.4.17 The future baseline traffic flows with the Link Road open are shown in Tables 9.7 to 9.9.

Table 9.7: Future baseline traffic flows (24 Hour AADT) relevant to construction starting Q2 2020

LINK NO.	LOCATION	2021 BASELINE		2023 BASELINE	
		TOTAL VEHICLE	TOTAL HGVS	TOTAL VEHICLE	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	822	216	844	222
2	South Marsh Road (West of Hobson Way)	813	58	834	60
3	South Humber Bank Link Road (South of South Marsh Road)	2,133	311	2,194	347
4	Hobson Way (North of South Marsh Road)	4,135	267	4,245	274
5	Kiln Lane (West of Hobson Way)	4,480	1,045	4,599	1,073
6	A1173 (West of North Moss Lane)	6,140	2,640	6,303	2,710
7	A1173 (North of A180)	11,668	2,751	11,977	2,823

Table 9.8: Future baseline traffic flows (24 Hour AADT) relevant to construction starting Q3 2021

LINK NO.	LOCATION	2022 BASELINE		2024 BASELINE	
		TOTAL VEHICLE	TOTAL HGVS	TOTAL VEHICLE	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	833	219	855	225
2	South Marsh Road (West of Hobson Way)	824	59	845	60
3	South Humber Bank Link Road (South of South Marsh Road)	2,167	311	2,221	324
4	Hobson Way (North of South Marsh Road)	4,190	271	4,297	278
5	Kiln Lane (West of Hobson Way)	4,539	1,059	4,658	1,086
6	A1173 (West of North Moss Lane)	6,222	2,675	6,384	2,745
7	A1173 (North of A180)	11,822	2,962	12,131	2,860

Table 9.9: Future baseline traffic flows (24 Hour AADT) relevant to construction starting Q3 2026

LINK NO.	LOCATION	2027 BASELINE		2029 BASELINE	
		TOTAL VEHICLE	TOTAL HGVS	TOTAL VEHICLE	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	878	231	891	234
2	South Marsh Road (West of Hobson Way)	869	62	881	63
3	South Humber Bank Link Road (South of South Marsh Road)	2,282	331	2,315	338
4	Hobson Way (North of South Marsh Road)	4,418	285	4,480	289
5	Kiln Lane (West of Hobson Way)	4,787	1,116	4,854	1,132
6	A1173 (West of North Moss Lane)	6,559	2,820	6,652	2,860
7	A1173 (North of A180)	12,465	2,939	12,642	2,980

9.4.18 The assessment also has regard to the traffic generated by the following committed developments within the Study Area:

- North Beck Energy Centre (Planning Ref: DM/0026/18/FUL);
- Stallingborough Employment Site (Planning Ref: DM/0105/18/FUL);
- End of Life Tyre Pyrolysis Plant (Planning Ref: DM/0333/17/FUL);
- Paragon/ Kia Development (Planning Ref: DM/0147/16/FUL);
- Renewable Power Facility (Planning Ref: DM/0848/14/FUL);
- Development of a Sustainable Transport Fuels Facility (Planning Ref: DM/0664/19/FUL); and
- 525 Unit Residential Development, Stallingborough Road, Immingham (Planning Ref: DM/0728/18/OUT).

9.4.19 Traffic associated with the Consented Development has not been included to enable an assessment of the effects of the Proposed Development (in Section 9.6) against a future baseline without the Consented Development.

9.4.20 The total committed two-way flows for each link road within the Study Area for the Construction (peak) years 2021, 2022 and 2027, and the Opening years 2023, 2024 and 2029 are shown in Tables 9.10 to 9.12.

Table 9.10: Committed development flows (24 hour AADT) relevant to construction starting Q2 2020

LINK NO.	LOCATION	2021		2023	
		TOTAL VEHICLE	TOTAL HGVS	TOTAL VEHICLE	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	0	0	0	0
2	South Marsh Road (West of Hobson Way)	0	0	0	0
3	South Humber Bank Link Road (South of South Marsh Road)	576	276	650	276
4	Hobson Way (North of South Marsh Road)	576	276	650	276
5	Kiln Lane (West of Hobson Way)	1,313	356	1,559	528
6	A1173 (West of North Moss Lane)	1,043	159	1,380	682
7	A1173 (North of A180)	2,206	542	2,989	983

Table 9.11: Committed development flows (24 hour AADT) relevant to construction starting Q3 2021

LINK NO.	LOCATION	2022		2024	
		TOTAL VEHICLE	TOTAL HGVS	TOTAL VEHICLE	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	0	0	0	0
2	South Marsh Road (West of Hobson Way)	0	0	0	0
3	South Humber Bank Link Road (South of South Marsh Road)	650	276	350	276
4	Hobson Way (North of South Marsh Road)	650	276	350	276
5	Kiln Lane (West of Hobson Way)	1,559	528	1,259	528
6	A1173 (West of North Moss Lane)	1,380	682	1,190	758
7	A1173 (North of A180)	2,989	983	3,824	1,388

Table 9.12: Committed development flows (24 hour AADT) relevant to construction starting Q3 2026

LINK NO.	LOCATION	2027		2029	
		TOTAL VEHICLE	TOTAL HGVS	TOTAL VEHICLE	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	0	0	0	0
2	South Marsh Road (West of Hobson Way)	0	0	0	0
3	South Humber Bank Link Road (South of South Marsh Road)	350	276	350	276
4	Hobson Way (North of South Marsh Road)	350	276	350	276
5	Kiln Lane (West of Hobson Way)	1,259	528	1,259	528
6	A1173 (West of North Moss Lane)	1,190	758	1,190	758
7	A1173 (North of A180)	3,824	1,388	3,824	1,388

9.4.21 Tables 9.13 to 9.15 summarise the future year baseline (i.e. existing baseline traffic, plus growth factor, plus committed development traffic flows) for the assessment years 2021, 2022 and 2027 (Construction peak) and 2023, 2024 and 2029 (Opening).

Table 9.13: Future baseline traffic flows including committed development (24 hour AADT) relevant to construction starting in Q2 2020

LINK NO.	LOCATION	2021 BASELINE PLUS COMMITTED		2023 BASELINE PLUS COMMITTED	
		TOTAL VEHICLE	TOTAL HGVS	TOTAL VEHICLE	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	822	216	844	222
2	South Marsh Road (West of Hobson Way)	813	58	834	60
3	South Humber Bank Link Road (South of South Marsh Road)	2,709	587	2,844	593
4	Hobson Way (North of South Marsh Road)	4,711	543	4,895	550
5	Kiln Lane (West of Hobson Way)	5,793	1,401	6,158	1,601
6	A1173 (West of North Moss Lane)	7,183	2,799	7,683	3,392
7	A1173 (North of A180)	13,874	3,293	14,966	3,806

Table 9.14: Future baseline traffic flows including committed development (24 hour AADT) relevant to construction starting in Q3 2021

LINK NO.	LOCATION	2022 BASELINE PLUS COMMITTED		2024 BASELINE PLUS COMMITTED	
		TOTAL VEHICLE	TOTAL HGVS	TOTAL VEHICLE	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	833	219	855	225
2	South Marsh Road (West of Hobson Way)	824	59	845	60
3	South Humber Bank Link Road (South of South Marsh Road)	2,817	587	2,571	600
4	Hobson Way (North of South Marsh Road)	4,840	547	4,647	554
5	Kiln Lane (West of Hobson Way)	6,098	1,587	5,917	1,614
6	A1173 (West of North Moss Lane)	7,602	3,357	7,574	3,503
7	A1173 (North of A180)	14,811	3,945	15,955	4,248

Table 9.15: Future baseline traffic flows including committed development (24 hour AADT) relevant to construction starting in Q3 2026

LINK NO.	LOCATION	2027 BASELINE PLUS COMMITTED		2029 BASELINE PLUS COMMITTED	
		TOTAL VEHICLE	TOTAL HGVS	TOTAL VEHICLE	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	878	231	891	234
2	South Marsh Road (West of Hobson Way)	869	62	881	63
3	South Humber Bank Link Road (South of South Marsh Road)	2,632	607	2,665	614
4	Hobson Way (North of South Marsh Road)	4,768	561	4,830	565
5	Kiln Lane (West of Hobson Way)	6,046	1,644	6,113	1,660
6	A1173 (West of North Moss Lane)	7,749	3,578	7,842	3,618
7	A1173 (North of A180)	16,289	4,327	16,466	4,368

9.5 Development Design and Impact Avoidance

9.5.1 It is recognised that it is important to minimise the temporary impact of construction traffic over the approximate 36 month construction period. During the construction phase, the Applicant will apply the following mitigation measures in respect of the local highways:

- implementation of a Construction Worker Travel Plan (CWTP) aimed at identifying measures and establishing procedures to encourage workers to ensure that vehicle occupancy rates used in the TA as a basis for analysis are achieved (a Framework CWTP is provided in Annex 27 of the TA in Appendix 9A ES Volume III (Document Ref. 6.4)). Measures could include:
 - managing the number and use of parking spaces on-site to ensure that the number of vehicles arriving at the Site is controlled;
 - encouraging contractors to provide minibuses for transporting their workers from key points of construction worker origin to the Site;
 - implementing a construction worker car share scheme; and
 - providing secure parking for bicycles.
- implementation of a Construction Traffic Management Plan (CTMP) identifying measures to control the routing and impact that construction HGVs and Abnormal Indivisible Load (AIL) deliveries will have on the local road network during construction (a Framework CTMP is provided in Annex 28 of the TA in Appendix 9A ES Volume III (Document Ref. 6.4)). Measures could include:
 - HGV routing plan communicated to all drivers during their induction;
 - local signage strategy;
 - limiting construction delivery hours to 07:00 – 19:00 Monday to Saturday where possible;
 - management of abnormal load deliveries;
 - 24 hour contact name and number for members of the public should there be any issues relating to construction traffic;
 - consultation with AIL Officers at Highways England and NELC at the earliest opportunity on the programme and plan for delivery of AILs; and
 - make the public aware of when AIL deliveries are taking place via social media, local radio and the local press.

9.5.2 During operation, an Operational Travel Plan will be implemented, aimed at identifying measures and establishing procedures to encourage operational staff to adopt modes of transport which reduce reliance on single occupancy private car use. A Framework Operational Travel Plan is provided in Annex 7 of the TA in Appendix 9A, ES Volume III (Document Ref. 6.4).

9.5.3 A Delivery and Servicing Plan will also be prepared to demonstrate how deliveries and servicing will be managed, including a routing plan for operational HGVs. A draft is provided in Annex 26 of the TA in Appendix 9A, ES Volume III (Document Ref. 6.4).

9.6 Likely Impacts and Effects

The Proposed Development

9.6.1 The impacts and effects of the Proposed Development are described below.

Construction

9.6.2 It is proposed that all construction worker vehicles and HGVs will access the Site from South Marsh Road via the existing gate entrance to the east of South Humber Bank Power Station (in the north-west of the Main Development Area) and via a newly constructed access for the Proposed Development in the north-east of the Main Development Area (see Annex 6 of the TA in Appendix 9A, ES Volume III (Document Ref. 6.4)).

9.6.3 The construction period for the Proposed Development is temporary in nature and estimated to be approximately 36 months starting in 2020, reaching a peak in 2021 or starting in 2021 following DCO award reaching a peak in 2022. However, if for any reason construction is delayed as late as possible after DCO award, the worst case scenario for traffic would be construction starting in 2026, reaching a peak in 2027.

9.6.4 The profile of the anticipated daily workforce each month through the construction period is provided in the TA presented within Appendix 9A in ES Volume III (Document Ref. 6.4). The standard construction working hours for the Proposed Development will be 07:00 to 19:00 Monday to Saturday. Key exceptions to these working hours could include activities that must be carried out continuously (such as concrete slip-forming) and internal non-noisy activities, where they comply with any restrictions agreed with NELC.

9.6.5 Based on the methodology contained within the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)), the weekday construction worker shift is likely to generate 375 vehicular trips (one-way) during the AM arrival and PM departure periods at the peak of construction (estimated to be at the beginning of the second year of construction, around Q2 2021, Q3 2022 or Q3 2027).

9.6.6 The volume of construction HGVs on the network is predicted to be at its maximum of 412 two-way daily vehicle movements (206 in and 206 out) during part of the first year of construction (around Q2 2020), associated with the potential cut and fill of the top layer of ground within the Main Development Area to improve the geotechnical condition of the ground. During the remainder of the construction period HGV movements will vary between 18 and 116 two-way movements per day.

9.6.7 Combining construction workforce vehicle movements with construction HGV movements over the entire construction programme shows the overall peak of construction to occur in the second year of construction when 866 two-way vehicle movements are anticipated (750 two-way car/ van movements and 116 two-way HGV movements per day). Construction deliveries will be made between 07:00 and 19:00 hours.

9.6.8 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.

- 9.6.9 The ports of Immingham, Hull and Goole are situated near to the Proposed Development. Detailed consideration will be given to the appropriate port and AIL routes during detailed design when details of the size of loads and timing of deliveries are known. However, it is a reasonable expectation that major ports are able to accommodate abnormal loads and that adequate access to the strategic network is achievable. NELC (and others as appropriate) will be consulted via the usual procedures regarding the route, dates and any traffic management requirements for AIL deliveries.
- 9.6.10 Table 9.16 below summarises the expected daily profile of construction phase peak traffic levels.

Table 9.16: Daily construction vehicle profile (Construction peak)

HOUR BEGINNING	CONSTRUCTION WORKER VEHICLES		CONSTRUCTION HGVS	
	ARRIVALS	DEPARTURES	ARRIVALS	DEPARTURES
06:00	158	0	0	0
07:00	138	0	5	5
08:00	45	0	5	5
09:00	34	0	5	5
10:00	0	0	5	5
11:00	0	0	5	5
12:00	0	0	5	5
13:00	0	0	5	5
14:00	0	0	5	5
15:00	0	0	5	5
16:00	0	82	5	5
17:00	0	98	5	5
18:00	0	176	3	3
19:00	0	19	0	0
Total	375	375	58	58

- 9.6.11 Based on the vehicle assignment contained within the TA in Appendix 9A, ES Volume III (Document Ref. 6.4), Table 9.17 summarises the likely changes in link flows within the Study Area for the Construction assessment year 2021, Table 9.18 summarises the likely changes for the Construction assessment year 2022 and Table 9.19 summarises the likely changes for the Construction assessment year 2027. HGV traffic has been assigned to the most direct route to the strategic network which is the A180 Stallingborough Interchange via Hobson Way, Kiln Lane and the A1173. The construction workers assignment has been based on the geographic split of population within a 45 minute drive-time of the Site.

Table 9.17: 2021 base + committed development + construction traffic (24hr AADT)

LINK	LOCATION	BASELINE FLOW (INC. COM DEV)		CONSTRUCTION TRAFFIC		PERCENTAGE INCREASE	
		TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	822	216	866	116	105%	54%
2	South Marsh Road (West of Hobson Way)	813	58	45	0	6%	0%
3	South Humber Bank Link Road (South of South Marsh Road)	2,709	587	136	0	5%	0%
4	Hobson Way (North of South Marsh Road)	4,711	543	686	116	15%	21%
5	Kiln Lane (West of Hobson Way)	5,793	1,401	686	116	12%	8%
6	A1173 (West of North Moss Lane)	7,183	2,799	686	116	10%	4%
7	A1173 (North of A180)	13,874	3,293	671	116	5%	4%

Table 9.18: 2022 base + committed development + construction traffic (24hr AADT)

LINK	LOCATION	BASELINE FLOW (INC. COM DEV)		CONSTRUCTION TRAFFIC		PERCENTAGE INCREASE	
		TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	833	219	866	116	104%	53%
2	South Marsh Road (West of Hobson Way)	824	59	45	0	6%	0%
3	South Humber Bank Link Road (South of South Marsh Road)	2,817	587	136	0	5%	0%
4	Hobson Way (North of South Marsh Road)	4,840	547	686	116	14%	21%
5	Kiln Lane (West of Hobson Way)	6,098	1,587	686	116	11%	7%
6	A1173 (West of North Moss Lane)	7,602	3,357	686	116	9%	4%
7	A1173 (North of A180)	14,811	3,945	671	116	5%	3%

Table 9.19: 2027 base + committed development + construction traffic (24hr AADT)

LINK	LOCATION	BASELINE FLOW (INC. COM DEV)		CONSTRUCTION TRAFFIC		PERCENTAGE INCREASE	
		TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	878	231	866	116	99%	50%
2	South Marsh Road (West of Hobson Way)	869	62	45	0	5%	0%
3	South Humber Bank Link Road (South of South Marsh Road)	2,632	607	136	0	5%	0%
3	Hobson Way (North of South Marsh Road)	4,768	561	686	116	14%	21%
4	Kiln Lane (West of Hobson Way)	6,046	1,644	686	116	11%	7%
5	A1173 (West of North Moss Lane)	7,749	3,578	686	116	9%	3%
6	A1173 (North of A180)	16,289	4,327	671	116	4%	3%

9.6.12 As described in Section 9.3 above, the IEA guidelines (IEA, 1993) suggests two broad rules of thumb should be used as a screening process to delimit the scale and extent of assessment:

- Rule 1: Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% or more.

9.6.13 Table 9.17 demonstrates that the Proposed Development construction traffic will result in a greater than 30% increase in traffic on South Marsh Road (East of Hobson Way) (105% increase) if the peak of construction traffic is in 2021. This is primarily due to the low number of existing vehicles using South Marsh Road.

9.6.14 Table 9.18 demonstrates that the Proposed Development construction traffic will result in a greater than 30% increase in traffic on South Marsh Road (East of

Hobson Way) (104% increase) if the peak of construction traffic is in 2022. This is primarily due to the low number of existing vehicles using South Marsh Road.

9.6.15 Table 9.19 demonstrates that the Proposed Development construction traffic will result in a greater than 30% increase in traffic on South Marsh Road (East of Hobson Way) (99% increase) if the peak of construction traffic is in 2027. This is primarily due to the low number of existing vehicles using South Marsh Road.

9.6.16 For all other links within the Study Area no further assessment has been undertaken based on the IEA screening rules above. As such, the environmental effects associated with construction traffic would be negligible adverse (not significant) on all links except for South Marsh Road (East of Hobson Way). Effects on this link are assessed below.

Severance

9.6.17 It is evident that the change in total traffic associated with construction is greater than 90% (high impact) on South Marsh Road (East of Hobson Way) due to low current usage of that road, however given the link sensitivity is low, the overall effect is considered minor adverse (not significant).

Pedestrian Amenity

9.6.18 It is identified in the IEA guidelines (IEA, 1993), that pedestrian amenity is affected where traffic flows are halved or doubled. It is evident that the change in total traffic (or HGV component) associated with construction is greater than 100% (medium impact) on South Marsh Road (East of Hobson Way) however given the link sensitivity is low with no pedestrian footways provided on this section of South Marsh Road, the overall effect is considered minor adverse (not significant).

Fear and Intimidation

9.6.19 It is evident that the change in total traffic associated with construction is greater than 90% (high impact) on South Marsh Road (East of Hobson Way) due to low current usage of that road, however given the link sensitivity is low, the overall effect is considered minor adverse (not significant).

Accidents and Safety

9.6.20 There have been zero PIAs on South Marsh Road (East of Hobson Way) in the last five years. As such increases in traffic associated with construction will result in a negligible adverse (not significant) effect.

Driver Delay

9.6.21 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 key junctions within the Study Area (the results of which are provided in the TA in Appendix 9A, ES Report Volume III (Document Ref. 6.4)) for the AM and PM Peak hours (07:00 – 08:00 and 16:00 – 17:00) and demonstrates that each junction operates within its design capacity in terms of the future baseline plus committed development and future baseline plus committed development plus Proposed Development peak of construction scenarios apart from the A180

Westgate Roundabout. The A180 Westgate Roundabout junction is already operating above its theoretical capacity in 2018. However, considering the small percentage that construction flows are adding to the junction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junction's performance. Junction modelling therefore leads to the conclusion that the driver delay effect of the Proposed Development during construction will be negligible adverse (not significant).

Opening and Operation

- 9.6.22 Once operational the Proposed Development will employ up to 56 staff. Conservatively assuming a car occupancy of one staff member per vehicle, this equates to 56 cars per day (112 vehicle movements).
- 9.6.23 Given the 24 hour operation of the facility a staff shift system will be in operation and is likely to be undertaken via three 8 hour shifts (06:00 – 14:00, 14:00 – 22:00, 22:00 – 06:00). It is anticipated there will be a maximum of 14 staff per shift, with an additional 14 daytime/ management staff being employed at the Proposed Development.
- 9.6.24 As set out in the TA (Appendix 9A in ES Report Volume III (Document Ref. 6.4)), the forecast operational HGV traffic is based on worst case assumptions for the purposes of assessment:
- average fuel net calorific value (NCV) at the lowest end of the operational range (9 MJ/kg) for the expected plant annual running hours, resulting in a maximum annual fuel throughput of 753,500 tonnes; and
 - average HGV payload of 16 tonnes.
- 9.6.25 Deliveries of consumables, and removal of bottom ash and flue gas treatment residues off-site are proposed to occur between the hours of 06:00 and 18:00. Fuel deliveries are proposed to take place 24 hours per day, seven days per week, but for the purposes of the transport assessment, as a worst case it is assumed that all deliveries (consumables and fuel) and collections (bottom ash and flue gas treatment residues) will take place between 06:00 and 18:00.
- 9.6.26 Based on these assumptions it is anticipated that total HGV movements at the Proposed Development would be 312 in and 312 out per day. The calculation of anticipated fuel deliveries is set out in the TA (Appendix 9A in ES Report Volume III (Document Ref. 6.4)).
- 9.6.27 It is expected that each year the facility will be taken offline for approximately three weeks to allow for invasive maintenance activities such as internal inspection of the boiler. Approximately every five to six years the facility will be taken offline for a major outage for substantial maintenance activities such as replacement of sections of the boiler. Such a major outage is likely to last approximately five weeks where it could be expected that up to 200 staff could be on site on any one day.
- 9.6.28 Table 9.20 below summarises the expected daily profile of operational traffic levels.

Table 9.20: Daily operational vehicle profile

HOUR BEGINNING	STAFF VEHICLES		OPERATIONAL HGVS	
	ARRIVALS	DEPARTURES	ARRIVALS	DEPARTURES
05:00	14	0	0	0
06:00	0	14	44	43
07:00	14	0	33	33
08:00	0	0	36	33
09:00	0	0	36	34
10:00	0	0	26	31
11:00	0	0	29	27
12:00	0	0	29	27
13:00	14	0	26	25
14:00	0	14	20	20
15:00	0	0	16	18
16:00	0	0	13	14
17:00	0	14	4	5
18:00	0	0	0	2
19:00	0	0	0	0
20:00	0	0	0	0
21:00	14	0	0	0
22:00	0	14	0	0
23:00	0	0	0	0
00:00	0	0	0	0
Total	56	56	312	312

9.6.29 Based on the staff and HGV vehicle assignments contained within the TA (Appendix 9A in ES Report Volume III (Document Ref. 6.4)), Table 9.21 summarises the likely changes in link flows within the agreed Study Area for the 2023 Opening year, Table 9.22 summarises the likely changes for the 2024 Opening year and Table 9.23 summarises the likely changes for the 2029 Opening year.

Table 9.21: 2023 base + committed development + operational traffic (24hr AADT)

LINK	LOCATION	BASELINE FLOW (INC. COM DEV)		OPERATIONAL TRAFFIC		PERCENTAGE INCREASE	
		TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	844	222	736	624	87%	281%
2	South Marsh Road (West of Hobson Way)	834	60	27	0	3%	0%
3	South Humber Bank Link Road (South of South Marsh Road)	2,844	593	64	0	2%	0%
4	Hobson Way (North of South Marsh Road)	4,895	550	645	624	13%	113%
5	Kiln Lane (West of Hobson Way)	6,158	1,601	645	624	11%	39%
6	A1173 (West of North Moss Lane)	7,683	3,392	645	624	8%	18%
7	A1173 (North of A180)	14,966	3,806	643	624	4%	16%

Table 9.22: 2024 base + committed development + operational traffic (24hr AADT)

LINK	LOCATION	BASELINE FLOW (INC. COM DEV)		OPERATIONAL TRAFFIC		PERCENTAGE INCREASE	
		TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	855	225	736	624	86%	277%
2	South Marsh Road (West	845	60	27	0	3%	0%

LINK	LOCATION	BASELINE FLOW (INC. COM DEV)		OPERATIONAL TRAFFIC		PERCENTAGE INCREASE	
		TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS
	of Hobson Way)						
3	South Humber Bank Link Road (South of South Marsh Road)	2,571	600	64	0	3%	0%
4	Hobson Way (North of South Marsh Road)	4,647	554	645	624	14%	113%
5	Kiln Lane (West of Hobson Way)	5,917	1,614	645	624	11%	39%
6	A1173 (West of North Moss Lane)	7,574	3,503	645	624	9%	18%
7	A1173 (North of A180)	15,955	4,248	643	624	4%	15%

Table 9.23: 2029 base + committed development + operational traffic (24hr AADT)

LINK	LOCATION	BASELINE FLOW (INC. COM DEV)		OPERATIONAL TRAFFIC		PERCENTAGE INCREASE	
		TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS
1	South Marsh Road (East of Hobson Way)	891	234	736	624	83%	267%
2	South Marsh Road (West of Hobson Way)	881	63	27	0	3%	0%
3	South Humber Bank Link Road (South of South Marsh Road)	2,665	614	64	0	2%	0%

LINK	LOCATION	BASELINE FLOW (INC. COM DEV)		OPERATIONAL TRAFFIC		PERCENTAGE INCREASE	
		TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS	TOTAL VEH.	TOTAL HGVS
4	Hobson Way (North of South Marsh Road)	4,830	565	645	624	13%	110%
5	Kiln Lane (West of Hobson Way)	6,113	1,660	645	624	11%	38%
6	A1173 (West of North Moss Lane)	7,842	3,618	645	624	8%	17%
7	A1173 (North of A180)	16,466	4,368	643	624	4%	14%

9.6.30 The operational traffic assessment Study Area is based on Rules 1 and 2 of the IEA guidelines (IEA, 1993) as described in Section 9.3 above.

9.6.31 Table 9.21 (Operation in 2023) demonstrates that the operational traffic associated with the Proposed Development will result in a greater than 30% increase in traffic on South Marsh Road (East of Hobson Way) in 2023 with an 87% increase in total traffic and a 281% increase in HGVs. Hobson Way (North of South Marsh Road) shows an increase in total traffic of 13% and an increase in HGV traffic of 113% in 2023. This is primarily due to the low number of existing vehicles using South Marsh Road and Hobson Way. In addition, Kiln Lane (West of Hobson Way) shows an increase in total traffic of 11% and an increase in HGV traffic of 39% in 2023.

9.6.32 Table 9.22 (Operation in 2024) demonstrates that the operational traffic associated with the Proposed Development will result in a greater than 30% increase in traffic on South Marsh Road (East of Hobson Way) in 2024 with an 86% increase in total traffic and a 277% increase in HGVs. Hobson Way (North of South Marsh Road) shows an increase in total traffic of 14% and an increase in HGV traffic of 113% in 2024. This is primarily due to the low number of existing vehicles using South Marsh Road. and Hobson Way. In addition, Kiln Lane (West of Hobson Way) shows an increase in total traffic of 11% and an increase in HGV traffic of 39% in 2024.

9.6.33 Table 9.23 (Operation in 2029) demonstrates that the operational traffic associated with the Proposed Development will result in a greater than 30% increase in traffic on South Marsh Road (East of Hobson Way) in 2029 with an 83% increase in total traffic and a 267% increase in HGVs. Hobson Way (North of South Marsh Road) shows an increase in total traffic of 13% and an increase in HGV traffic of 110% in 2029. This is primarily due to the low number of existing vehicles using South Marsh Road. and Hobson Way. In addition, Kiln Lane (West

of Hobson Way) shows an increase in total traffic of 11% and an increase in HGV traffic of 38% in 2029.

9.6.34 For all other links within the Study Area no further assessment has been undertaken based on IEA screening rules. As such, the environmental effects associated with operational traffic would be negligible adverse (not significant) on all links except for South Marsh Road (East of Hobson Way), Hobson Way (North of South Marsh Road) and Kiln Lane in 2023, 2024 or 2029. Effects on these three links are assessed below.

Severance

9.6.35 It is evident from Table 9.21 that the change in total traffic associated with operation of the Proposed Development in 2023 is between 60% and 90% (medium impact) on South Marsh Road (East of Hobson Way) due to low current usage of that road, however given the link sensitivity is low with no pedestrian footways on this section of road, the overall effect is considered minor adverse (not significant).

9.6.36 The change in total traffic associated with operation of the Proposed Development in 2023 is less than 30% (very low impact) on Hobson Way (North of South Marsh Road). The link sensitivity is considered low given a pedestrian footway is provided on the western side of the carriageway. The overall effect is therefore considered negligible adverse (not significant).

9.6.37 The change in total traffic associated with operation of the Proposed Development in 2023 is less than 30% (very low impact) on Kiln Lane (West of Hobson Way). The link sensitivity is considered low given a pedestrian footway is provided on the southern side of the carriageway. The overall effect is therefore considered negligible adverse (not significant).

9.6.38 For Operation in 2024, it is evident from Table 9.22 that the magnitude of impacts, link sensitivities and significance of effects on severance are the same as described above at paragraphs 9.6.35 to 9.6.37 for Operation in 2023.

9.6.39 The overall effect on South Marsh Road (East of Hobson Way) in 2024 is assessed to be a medium impact resulting in a minor adverse (not significant) effect. The overall effect on Hobson Way (North of South Marsh Road) in 2024 is assessed to be a very low impact resulting in a negligible adverse (not significant) effect, and the overall effect on Kiln Lane (West of Hobson Way) in 2024 is assessed to be very low impact resulting in a negligible adverse (not significant) effect.

9.6.40 For Operation in 2029, it is evident from Table 9.23 that the magnitude of impacts, link sensitivities and significance of effects on severance are the same as described above at paragraphs 9.6.35 to 9.6.37 for Operation in 2023 and 9.6.38 to 9.6.39 for Operation in 2024.

9.6.41 The overall effect on South Marsh Road (East of Hobson Way) in 2029 is assessed to be a medium impact resulting in a minor adverse (not significant) effect. The overall effect on Hobson Way (North of South Marsh Road) in 2029 is assessed to be a very low impact resulting in a negligible adverse (not significant) effect, and the overall effect on Kiln Lane (West of Hobson Way) in

2029 is assessed to be very low impact resulting in a negligible adverse (not significant) effect.

Pedestrian Amenity

- 9.6.42 It is identified in the IEA guidelines (IEA, 1993) that pedestrian amenity is affected where traffic flows are halved or doubled. It is evident from Table 9.21 that the change in total traffic (or HGV component) associated with operation is greater than 151% (high impact) on South Marsh Road (East of Hobson Way) in 2023 however given the link sensitivity is low with no pedestrian footways provided on this section of South Marsh Road, the overall effect is considered minor adverse (not significant).
- 9.6.43 The change in total traffic (or HGV component) associated with operation of the Proposed Development in 2023 is between 101% and 150% (medium impact) on Hobson Way due to the low HGV usage of that road. The link sensitivity is considered low given a pedestrian footway is provided on the western side of the carriageway. However, given the low current HGV usage of this road, the overall effect is considered minor adverse (not significant).
- 9.6.44 The change in total traffic (or HGV component) associated with the Proposed Development in 2023 is less than 50% (very low impact) on Kiln Lane. The link sensitivity is considered low given a pedestrian footway is provided on the southern side of the carriageway. The overall effect is therefore considered negligible adverse (not significant).
- 9.6.45 For Operation in 2024, it is evident from Table 9.22 that the magnitude of impacts, link sensitivities and significance of effects on pedestrian amenity are the same as described above at paragraphs 9.6.42 to 9.6.44 for Operation in 2023.
- 9.6.46 The overall effect on South Marsh Road (East of Hobson Way) in 2024 is assessed to be a high impact resulting in a minor adverse (not significant) effect. The overall effect on Hobson Way (North of South Marsh Road) in 2024 is assessed to be a medium impact resulting in a minor adverse (not significant) effect, and the overall effect on Kiln Lane (West of Hobson Way) in 2024 is assessed to be low impact resulting in a negligible adverse (not significant) effect.
- 9.6.47 For Operation in 2029, it is evident from Table 9.23 that the magnitude of impacts, link sensitivities and significance of effects on pedestrian amenity are the same as described above at paragraphs 9.6.42 to 9.6.44 for operation in 2023 and paragraphs 9.6.45 to 9.6.46 for operation in 2024.
- 9.6.48 The overall effect on South Marsh Road (East of Hobson Way) in 2029 is assessed to be a high impact resulting in a minor adverse (not significant) effect. The overall effect on Hobson Way (North of South Marsh Road) in 2029 is assessed to be a medium impact resulting in a minor adverse (not significant) effect, and the overall effect on Kiln Lane (West of Hobson Way) in 2029 is assessed to be low impact resulting in a negligible adverse (not significant) effect.

Fear and Intimidation

- 9.6.49 It is evident from Table 9.21 that the change in total traffic associated with operation of the Proposed Development in 2023 is between 60% and 90% (medium impact) on South Marsh Road (East of Hobson Way) due to low current

usage of that road, however given the link sensitivity is low, the overall effect is considered minor adverse (not significant).

- 9.6.50 The change in total traffic associated with Operation in 2023 is less than 30% (very low impact) on Hobson Way (North of South Marsh Road) due to the low current usage of that road. The link sensitivity is considered low given a pedestrian footway is provided on the western side of the carriageway. The overall effect is therefore considered negligible adverse (not significant).
- 9.6.51 The change in total traffic associated with operation of the Proposed Development in 2023 is less than 30% (very low impact) on Kiln Lane (West of Hobson Way). The link sensitivity is considered low given a pedestrian footway is provided on the southern side of the carriageway. The overall effect is therefore considered negligible adverse (not significant).
- 9.6.52 For Operation in 2024 it is evident from Table 9.22 that the magnitude of impacts, link sensitivities and significance of effects on fear and intimidation are the same as described above at paragraphs 9.6.49 to 9.6.51 for Operation in 2023.
- 9.6.53 The overall effect on South Marsh Road (East of Hobson Way) in 2024 is assessed to be a medium impact resulting in a minor adverse (not significant) effect. The overall effect on Hobson Way (North of South Marsh Road) in 2024 is assessed to be a very low impact resulting in a negligible adverse (not significant) effect, and the overall effect on Kiln Lane (West of Hobson Way) in 2024 is assessed to be very low impact resulting in a negligible adverse (not significant) effect.
- 9.6.54 For Operation in 2029 it is evident from Table 9.23 that the magnitude of impacts, link sensitivities and significance of effects on fear and intimidation are the same as described above at paragraphs 9.6.49 to 9.6.51 for Operation in 2023 and paragraphs 9.6.52 to 9.6.53 for Operation in 2024.
- 9.6.55 The overall effect on South Marsh Road (East of Hobson Way) in 2029 is assessed to be a medium impact resulting in a minor adverse (not significant) effect. The overall effect on Hobson Way (North of South Marsh Road) in 2029 is assessed to be a very low impact resulting in a negligible adverse (not significant) effect, and the overall effect on Kiln Lane (West of Hobson Way) in 2029 is assessed to be very low impact resulting in a negligible adverse (not significant) effect.

Accidents and Safety

- 9.6.56 There have been zero PIAs on South Marsh Road (East of Hobson Way) in the last five years. As such, increases in traffic associated with operation will result in a negligible adverse (not significant) effect.
- 9.6.57 There has only been a single PIA on Hobson Way (North of South Marsh Road) in the last five years. Considering the traffic flows over this period (1,220 AADT) and the length of the link (1.2 km) the calculated accident rate is 374 accidents per billion vehicle kilometres. Compared with the national average rate which in 2016 was 480 accidents per billion vehicle kilometres it is considered that Hobson Way has low sensitivity, which with low magnitude increases in traffic will result in a negligible adverse (not significant) effect.

9.6.58 There have been three PIAs on Kiln Lane (West of Hobson Way) in the last five years. Considering the traffic flows over this period (2,854 AADT) and the length of the link (1.8 km) the calculated accident rate is 319 accidents per billion vehicle kilometres. Compared to the national average rate which in 2016 was 480 accidents per billion vehicle kilometres it is considered that Kiln Lane has low sensitivity, which with low magnitude increase in traffic will result in a negligible adverse (not significant) effect.

Driver Delay

9.6.59 Junction modelling has been undertaken at key junctions within the Study Area (the results of which are provided in the TA in Appendix 9A, ES Volume III (Document Ref. 6.4)) for the AM and PM Peak hours (07:00 – 08:00 and 16:00 – 17:00). This demonstrates that each junction operates within its design capacity in terms of the future baseline and future baseline plus Proposed Development scenarios apart from the A180 Westgate Roundabout and the A180 Pyewipe Roundabout. The A180 Westgate and Pyewipe Roundabout junctions were already operating above their theoretical capacity in 2018. However, considering the small percentage that Proposed Development flows will add to the junction, it is reasonable to consider that mitigation at this junction would be disproportionate to the marginal impact on the junction's performance. Junction modelling therefore leads to the conclusion that the driver delay effect of the Proposed Development will be negligible adverse (not significant).

Decommissioning

9.6.60 The activities involved in the decommissioning process for the Proposed Development are not yet known in detail, as it has a design life of approximately 30 years. There would be expected to be 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. However, vehicle numbers are expected to be much lower than those experienced during the construction or operation.

9.6.61 Current baseline data collected for the purposes of this assessment will not be valid at the year of decommissioning. However, as it is unlikely that baseline traffic figures on local roads will reduce appreciably over the next thirty years, it is considered that the percentage increase in traffic due to decommissioning would be negligible adverse (not significant).

Comparison of Proposed Development and Consented Development

9.6.62 The impacts and effects of the Proposed Development compared to the impacts and effects of the Consented Development are described below.

Construction

9.6.63 As described in the TA (Appendix 9A ES Volume III (Document Ref. 6.4)), the forecast construction traffic associated with the Proposed Development is the same as the forecast construction traffic associated with the Consented Development. This is because the conservative assumptions made in the TA for the Consented Development are also considered to be appropriate for the Proposed Development given the nature and overall scale of construction activity

required for the Proposed Development, and given the limited additional works required to enable the generating station to generate up to 95 MW.

- 9.6.64 In addition, the same methods for managing construction traffic (as set out in Section 9.5 above) will be applied for both Consented Development and the Proposed Development.
- 9.6.65 The construction traffic assessment for the Proposed Development considers three potential construction programme scenarios (starting in Q2 2020, Q3 2021 or Q3 2026), whereas the assessment of the Consented Development considered construction starting in Q3 2019. The baseline traffic flows assumed for the Proposed Development and Consented Development construction traffic assessments are therefore slightly different, but the overall conclusions are the same – namely that there will be no significant effects on severance, pedestrian amenity, fear and intimidation, accidents and safety, and driver delay. As such, the construction of the Proposed Development is predicted to have no additional effects compared to the construction of the Consented Development.

Opening and Operation

- 9.6.66 The maximum annual fuel throughout (up to 753,500 tonnes per annum), the amounts of other consumables and by-products, the operational and delivery hours assumed for the purposes of the transport assessment, and the number of staff, will be the same for the Proposed Development as for the Consented Development.
- 9.6.67 The frequency and scale of maintenance outages is also expected to be the same for the Proposed Development as for the Consented Development.
- 9.6.68 The operational traffic assessment for the Proposed Development considers three potential Opening years (2023, 2024 and 2029), whereas the assessment of the Consented Development assumed an Opening year of 2022. The baseline traffic flows assumed for the Proposed Development and Consented Development operational traffic assessments are therefore slightly different, but the overall conclusions are the same – namely that there will be no significant effects on severance, pedestrian amenity, fear and intimidation, accidents and safety, and driver delay. As such, the operation of the Proposed Development is predicted to have no additional effects compared to the operation of the Consented Development.

Decommissioning

- 9.6.69 The nature and scale of decommissioning activities required for the Proposed Development would be the same as for the Consented Development, so the decommissioning of the Proposed Development is predicted to have no additional effects compared to the decommissioning of the Consented Development.

9.7 Mitigation and Enhancement Measures

- 9.7.1 No additional mitigation measures or enhancement measures other than those set out in Section 9.5 are considered necessary.

9.8 Limitations or Difficulties

- 9.8.1 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.

9.9 Residual Effects and Conclusions

- 9.9.1 Residual effects are those predicted following consideration of any proposed mitigation measures. All effects for the construction, operational and decommissioning phases are predicted to be minor/ negligible adverse (not significant).
- 9.9.2 Traffic increases associated with the construction of the Proposed Development have been assessed to be minor/ negligible adverse (not significant). The additional traffic due to the Proposed Development construction activities will result in small, temporary, increases of traffic flows, including HGVs, on the roads leading to the Site. In line with the significance criteria presented earlier in this chapter and in the TA (Appendix 9A in ES Volume III (Document Ref. 6.4)), the impacts of construction traffic on all road sections and junctions are considered to be minor/ negligible adverse and not considered to be significant.
- 9.9.3 In line with the significance criteria presented earlier in this chapter and in the TA presented within Appendix 9A in ES Volume III (Document Ref. 6.4) the impacts of operational traffic on all road sections and junctions are considered to be minor/ negligible adverse and not considered to be significant.
- 9.9.4 The forecast traffic that will be generated by the construction and operation of the Proposed Development is the same as that forecast for the construction and operation of the Consented Development.

9.10 References

Crashmap website (www.crashmap.co.uk)

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