

# Cottam Solar Project

## Preliminary Environmental Information Report: Chapter 14: Transport and Access

Prepared by: TPA  
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### **VOLUME 2 – APPENDICES (SEPARATE DOCUMENT)**

- 14.1 Outline Construction Traffic Management Plan
- 14.2 Abnormal Indivisible Load Access Summary

## Issue Sheet

**Report Prepared for: Cottam Solar Project Ltd.**

### **Preliminary Environmental Information Report: Chapter 14: Transport and Access**

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## 14 Transport and Access

### 14.1 Introduction

14.1.1 This chapter of the PEIR reports the preliminary findings of the likely significant effects on Transport and Access as a result of the Scheme.

14.1.2 Solar farm developments do not generate significant traffic flows once operational. Typically, there will be only a handful of trips per month by Transit Van (or similar) for maintenance purposes. Therefore, all operational effects are negligible in significance. In addition, it is not anticipated that the effects associated with decommissioning will be worse than during the construction phase. Therefore, the focus of this Chapter is on the construction phase.

14.1.3 This chapter is not intended to be read as a standalone assessment and, where relevant, cross references are included to other chapters within this PEIR. This chapter is supported by the following Appendices:

- **Appendix 14.1:** Outline Construction Traffic Management Plan (CTMP) (prepared by Transport Planning Associates).
- **Appendix 14.2:** Abnormal Indivisible Load Access to Cottam Solar Project Substations – High Level Summary Document & Desktop review (prepared by Wynns).

### 14.2 Policy Context

14.2.1 This Chapter has been prepared with consideration to 'Guidance on Transport Assessments', prepared by the Department for Transport (DfT) in March 2007 (which is now archived but still considered relevant), 'Guidelines for the Environmental Assessment for Road Traffic', Institute of Environmental Management and Assessment (IEMA) and the 'Design Manual for Roads and Bridges (DMRB)', National Highways.

14.2.2 The proposals have also been considered in the context of the following documents:

- National Policy Statement EN-1 (2011);
- National Policy Statement EN-3 (2011)
- National Policy Statement EN-5 (2011);
- National Planning Policy Framework (2021);
- Central Lincolnshire Local Plan (2017), which covers the West Lindsey District;

- Draft Bassetlaw District Draft Local Plan 2020-2037 (August 2021).

#### National Planning Statements EN-1, EN-3 and EN-5

- 14.2.3 National Planning Policy Statement (NPS) EN-1 is the overarching policy statement for Energy. NPS EN-3 is focused on Renewable Energy and NPS EN-5 is focused on Electricity Network Infrastructure.
- 14.2.4 Section 5.13.2 of NPS EN-1 states that *“the consideration and mitigation of transport impacts is an essential part of Government’s wider policy objectives for sustainable development”*.
- 14.2.5 Paragraph 5.13.3 of NPS EN-1 states that *“if a project is likely to have significant transport implications, the applicant’s ES should include a transport assessment”*.
- 14.2.6 Paragraph 5.13.6 of NPS EN-1 states that *“A new energy NSIP may give rise to substantial impacts on the surrounding transport infrastructure and the [Secretary of State] should therefore ensure that the applicant has sought to mitigate these impacts, including during the construction phase of the development”*.

#### National Planning Policy Framework (2021)

- 14.2.7 Paragraph 111 of the National Planning Policy Framework states that, “Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe”.
- 14.2.8 Paragraph 113 of the NPPF states, “All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed”.

#### Central Lincolnshire Local Plan (2017)

- 14.2.9 Policy LP19 of the Central Lincolnshire Local Plan (2017) states that “...Proposals for non-wind renewable technology will be assessed on their merits, with the impacts, both individual and cumulative, considered against the benefits of the scheme...” The policy states that assessment should take account of “safety, including ensuring no adverse highway impact”.

#### Draft Bassetlaw District Local Plan 2020-2037 (August 2021).

- 14.2.10 Policy ST51 of the draft Bassetlaw Local Plan 2020-2037 (August 2021) states that, *“Development that generates, shares, transmits and/or stores renewable and low carbon energy, including community energy schemes, will be supported subject to the provision of details of expected power generation based upon yield or local self-*

*consumption of electricity and by demonstrating the satisfactory resolution of all relevant wider impacts...". The impacts include, "existing highway capacity and highway safety".*

### 14.3 Stakeholder Engagement

14.3.1 An EIA Scoping Report was submitted to the Secretary of State for Business, Energy and Industrial Strategy in January 2022, with a Scoping Opinion received from the Planning Inspectorate and other Stakeholders in March 2022. Separately, a Transport Scoping Note has been submitted to Lincolnshire County Council.

14.3.2 Table 14.1 provides a summary of the transport and access related comments made by relevant stakeholders and how these responses have been addressed in this PEIR.

**Table 14.1 Summary of Consultation**

Consultee	Summary of Response	How Response has been Addressed	Reference to Further Information
The Planning Inspectorate	"The Applicant proposes to scope out effects during the operational phase as "there are anticipated to be only a handful of visits to the Site per month by vehicle for maintenance". The number of movements required either for each solar array Site or the Proposed Development as a whole are not quantified".	Operational phase movements are quantified in this PEIR Chapter. There will be a handful of trips a month for maintenance purposes (less than one a day on average)	Section 14.6 of this Chapter
	"Scoping Report paragraph 14.4.2 states that further detail to support this will be provided in the ES. The Inspectorate agrees to scope this matter out subject to confirmation that the frequency and type of maintenance visits and vehicles, with reference to relevant thresholds (e.g. as set out in the Guidelines for Environmental Assessment	This is agreed. Operational phase movements are quantified in this PEIR Chapter. There will be less than one per day on average, which will not give rise to any significant effects, in line with the relevant thresholds set out in Guidelines for Environmental	Section 14.6 of this Chapter

Consultee	Summary of Response	How Response has been Addressed	Reference to Further Information
	<p>of Road Traffic, 1993) would not give rise to a significant effect, taking account of any potential cumulative traffic effects”.</p>	<p>Assessment of Road Traffic, 1993.</p>	
	<p>“The Scoping Report states that “the majority of the non-local workforce will stay at local accommodation and be transported to the Site by minibuses to minimise the impact on the strategic and local highway network”. No indication is given of the expected total workforce during construction, consequently it is unclear what the impact of the traffic movements associated with the local workforce will be.</p> <p>The ES should quantify the number of construction workers and vehicle movements required and explain, with reference to relevant thresholds, whether this is likely to result in significant traffic effects”</p>	<p>Information on the workforce is provided in this PEIR Chapter</p>	<p>Section 14.6 of this Chapter</p>
	<p>“The Proposed Development Site will affect a number of PROW but no surveys are proposed to understand the baseline use of these PROWs.</p> <p>Surveys should be undertaken to provide baseline data in relation to the use of the PROWs</p>	<p>Information on the PROWs that are affected by the Scheme is provided in this PEIR Chapter and will be in the CTMP.</p>	<p>Section 14.5 of this Chapter</p>

Consultee	Summary of Response	How Response has been Addressed	Reference to Further Information
	<p>affected by the Site, where appropriate, to define the change in characteristics of tourism and recreational use of PRoW as is required to define receptor sensitivity in Table 21.3 and the magnitude of change in Table 21.4”.</p>		
	<p>“The Inspectorate would expect to see a Decommissioning Plan, agreed with the Local Authority, secured through the inclusion of an Outline Decommissioning Plan or similar with the Application. The ES should clearly set out if and how decommissioning is to be assessed and any components which may remain following decommissioning”.</p>	<p>Decommissioning will not occur for 40 years. Baseline traffic flows cannot be accurately forecast for over 40 years in the future. The transport and access effects are likely to be equal, or less than the construction phase.</p> <p>The measures set out within the CTMP will be similar to that for the decommissioning phase.</p> <p>This will be confirmed through an Outline Decommissioning Plan to be secured through a requirement of the DCO.</p>	<p>Section 14.6 of this Chapter</p>
	<p>“Scoping Report Figures 14.1 and 14.2 demonstrate that accesses to Cottam one are mostly off rural roads e.g. Stow Lane; many of which are subject to weight restrictions. The ES should take account of such restrictions in the baseline description and choice of construction traffic routes, assessing any significant impacts where relevant”.</p>	<p>Weight restriction states "except for Access" Vehicles will not be through traffic</p>	



Consultee	Summary of Response	How Response has been Addressed	Reference to Further Information
Nottinghamshire County Council	<p>“The EIASR confirms that a Transport Assessment (TA), Construction Traffic Management Plan (CTMP), and a Construction Environment Management Plan will form part of the Environmental Impact Assessment to be submitted in support of the proposal. The scope of the TA and CTMP will include the GCC. The CTMP should also include a chapter on construction worker travel patterns and measures to encourage travel by alternative modes to single occupancy vehicle”.</p>	<p>Construction worker travel patterns will be included within the TA</p>	<p>Section 14.6 of this Chapter</p>
	<p>“The Transport Assessment (TA) methodology will be based on the Guidance for Transport Assessments (GTA), 2007. Although this has been archived, the methodology in the GTA complies with National Planning Practice Guidance and is therefore considered to be acceptable. The scope of the TA should include all main junctions within Nottinghamshire that would ‘that would be likely to experience an increase in traffic greater than 30 two-way peak hour movements (based on passenger car units (PCU))”.</p>	<p>There will not be an increase in traffic greater than 30 two-way peak hour movements at a single junction during the construction phase or the operational phase. Information of traffic flows associated with the construction phase are set out in this PEIR chapter.</p>	<p>Section 14.6 of this Chapter</p>
	<p>“It is crucial that a full analysis of any affected public rights of ways is</p>	<p>Information on the PRowS that are affected by the Scheme is provided</p>	<p>Section 14.6 of this Chapter</p>

Consultee	Summary of Response	How Response has been Addressed	Reference to Further Information
	<p>undertaken once the cabling routes are known. If temporary closures are necessary during the construction phase it is requested that these closures, wherever practicable, are employed sensitively to optimise the connectivity of the wider PROW network. In order to fully consider the PROW network and the impact of the proposal on the network, the applicant should undertake a full assessment of the PROW network and apply for a search of the Definitive Map for Public Rights of Way. The Nottinghamshire County Council Rights of Way team would welcome discussions regarding the enhancement and improvements to the Public Rights of Way network”.</p>	<p>in this PEIR Chapter and will be in the CTMP</p>	
<p>Canal and River Trust</p>	<p>“The River Trent is a commercial waterway, where the transport of equipment may be possible which could help to minimise the need to utilise the Highway Network. We advise that the use of the Trent should be included within the Transport and Access chapter, so as to ensure that every possibility to reduce the impact on highway is considered”.</p>	<p>To be considered as part of the ES.</p>	
<p>Network Rail</p>	<p>“With reference to the protection of the railway,</p>	<p>Glint and Glare assessment and</p>	

Consultee	Summary of Response	How Response has been Addressed	Reference to Further Information
	<p>the Environmental Statement should consider any impact of the scheme upon the railway infrastructure and upon operational railway safety. In particular, it should include a Glint and Glare study assessing the impact of the scheme upon train drivers (including distraction from glare and potential for conflict with railway signals). It should also include a Transport Assessment to identify any HGV traffic/haulage routes that may utilise railway assets such as bridges and level crossings during the construction and operation of the Site”.</p>	<p>Transport Assessment/Construction Traffic Management Plan to be provided as part of ES.</p>	
<p>North Lincolnshire Council</p>	<p>“Having considered Chapter 14 of the EIASR, it is noted that the likely residual effects would be negligible. The proposed Site is located in Lincolnshire and as such NLC do not envisage the proposals have a significant impact on the highway network in North Lincolnshire. Therefore, NLC do not have any objections to the approach set out in the EIASR at this stage”.</p>	<p>Noted and Agreed</p>	
<p>Sturton by Stow Parish Council</p>	<p>“Ingham Road has a weight limit of 7.5t therefore problems are likely with the road structure - the crane that went into the ditch caused many problems”.</p>	<p>Weight restriction state "except for Access" Vehicles will not be through traffic</p>	

Consultee	Summary of Response	How Response has been Addressed	Reference to Further Information
Environmental Hazards and Emergencies Department	"It is noted that the IEMA GEART guidelines are to be used and as such the operational phase is to be scoped out. The remainder of the traffic and transport assessment should consider impacts on pedestrians, cyclists and any horse riding activities".	Noted	
West Lindsey District Council	"Cumulative impacts (14.7.24) should include the Gate Burton Solar Project".	Cumulative effects are set out in this PEIR Chapter. Gate Burton has not yet been specifically assessed, as sufficient data is not currently available	Section 14.7 of this Chapter
West Lindsey District Council	"We note the low movements that would be generated during the operational phase, and do not object to this being 'scoped out".	Noted	

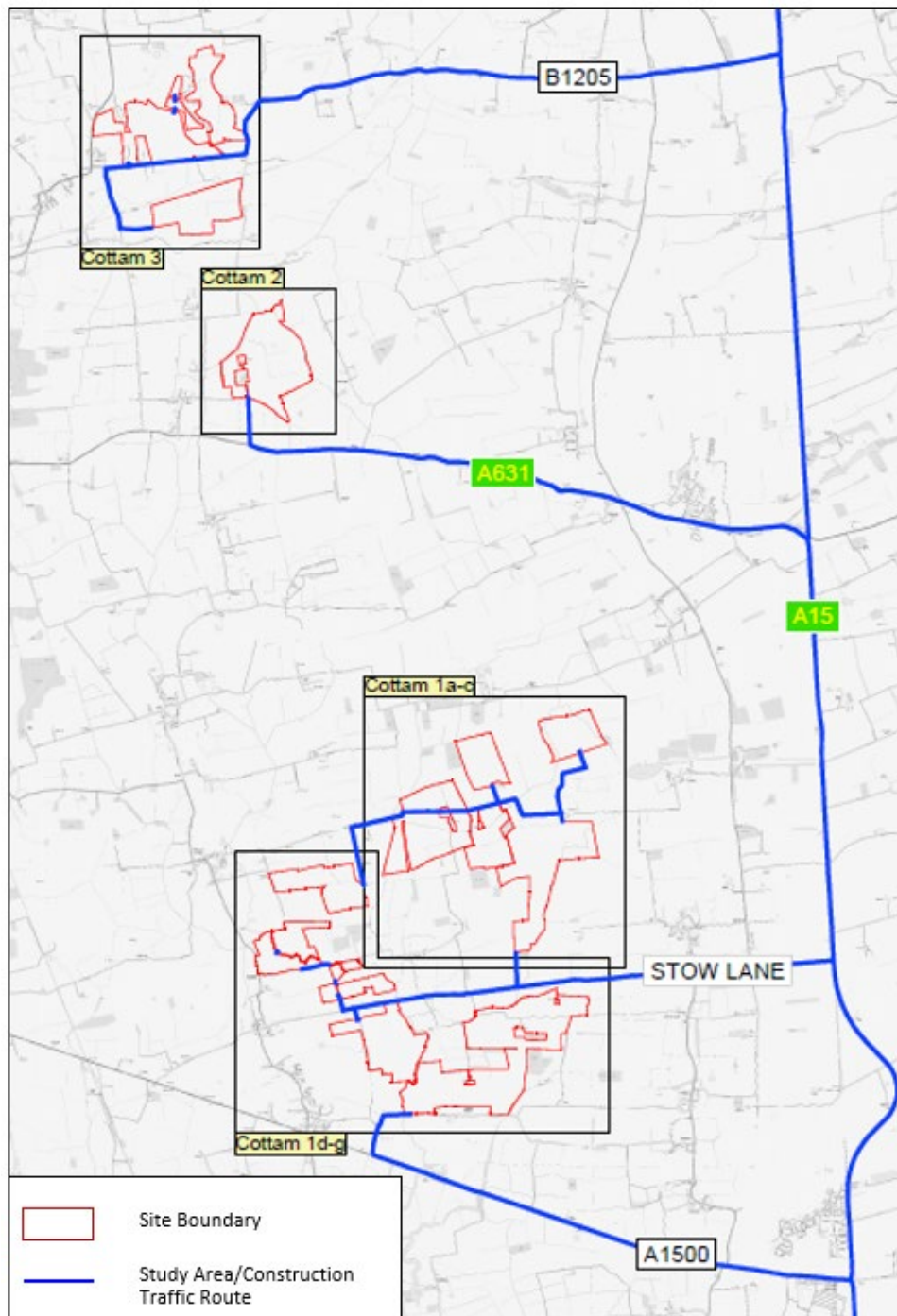
## 14.4 Assessment Methodology and Significance Criteria

14.4.1 This section sets out the assessment methodology. It sets out the study area, types of effects that will be assessed, the significance criteria and any limitations to the assessment.

### Study Area

14.4.2 The study area, including the identified receptors within the study area, are shown in Figure 14.1.

**Figure 14.1: Study Area**



Sources of Information

14.4.3 The following sources of information have been used in the assessment of transport and access effects:

- Automatic Traffic Count (ATC) Surveys;
- Department for Transport (DfT) 'Road Traffic Statistics' Database
- Personal injury accident data;
- Highway boundary information;
- OS Mapping; and
- Topographical surveys.

#### Types of Effect

14.4.4 In accordance with the IEMA Guidelines for assessment, of the environmental effects of road traffic, the following criteria has been considered in this assessment:

- Accidents and Safety;
- Severance;
- Driver Delay;
- Pedestrian Delay;
- Pedestrian Amenity (including Fear and Intimidation); and
- Hazardous Loads.

14.4.5 A description of each impact is provided below.

#### **Accidents and Safety**

14.4.6 The IEMA Guidelines do not include any definition in relation to the assessment of effects on accidents and safety, advising that professional judgement should be used to assess the implications of local circumstance, or factors which may increase or decrease the risk of accidents.

#### **Severance**

14.4.7 The IEMA Guidelines define severance as 'the perceived division that can occur within a community when it becomes separated by a major traffic artery' (paragraph 4.27) that 'separates people from places', for example, difficulties crossing existing roads or the physical barrier of the road itself.

14.4.8 There are no predictive formulae which give simple relationships between traffic factors and levels of significance. Nevertheless, there are a range of indicators for

determining significance of the relief from severance. The IEMA Guidelines suggest that 'changes in traffic flow of 30%, 60% and 90% are regarded as producing slight, moderate and substantial changes in severance respectively' (paragraph 4.31). The guidance also suggests that 'marginal changes in traffic flows are, by themselves, unlikely to create or remove severance'.

### **Driver Delay**

- 14.4.9 The IEMA Guidelines state that 'delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system' (paragraph 4.34). As such, the impact of a proposed development on driver delay is typically considered in relation to background traffic. Junction assessment modelling can be used to estimate increased vehicle delays at junctions, if necessary.

### **Pedestrian Delay (to include cyclists)**

- 14.4.10 The IEMA Guidelines state that 'changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to increases in delay' (paragraph 4.35). There are a range of local factors that affect pedestrian (and cyclist) delay, including the level of pedestrian (and cyclist) activity, visibility and general physical conditions of the Site. However, the IEMA Guidelines do not set out thresholds for judging the significance of changes in levels of delay and suggest that the assessor uses their judgement to determine whether pedestrian delay is a significant impact.

### **Pedestrian Amenity (Including Fear and Intimidation and to include cyclists)**

- 14.4.11 Pedestrian (and cyclist) amenity is broadly described in the IEMA Guidelines as 'the relative pleasantness of a journey (paragraph 4.39) and can be affected by traffic flow, composition and footway widths. This definition includes pedestrian (and cyclist) fear and intimidation and can be considered a much broader category when considering the overall relationship between pedestrians (and cyclists) and traffic. The IEMA Guidelines suggest that a threshold for judging this would be 'where the traffic flows (or its lorry component) is halved or doubled' (paragraph 4.39).

### **Hazardous Loads**

- 14.4.12 The IEMA Guidelines state that some developments include hazardous loads, and that this should be recognised by the assessment.
- 14.4.13 Some deliveries to the Site during the construction phase will be regarded as 'hazardous loads'. These include the deliveries of lithium-ion batteries, transformer oil and insulation gas. All regulations for the movement of hazardous loads will be followed, and the appropriate documentation will be obtained.



- 14.4.14 Whilst not hazardous, there will be abnormal loads to transport the transformers for the substation. An abnormal load is one where the vehicle exceeds 44 tonnes, the width is over 2.9m or the length is more than 18.65m. Further information will be set out in the ES Chapter and CTMP.

#### Assessment of Significance

- 14.4.15 The assessment of the Scheme's potentially significant effects has taken into account the construction phase. The effects for the decommissioning phase are likely to be equivalent to the construction phase. The significance level attributed to each effect (set out above) has been assessed based on the sensitivity of the affected receptor to change, and the magnitude of change as a result of the Scheme.

#### **Sensitivity of Receptor and Magnitude of Change**

- 14.4.16 The IEMA Guidelines set out two rules which will be used as threshold impacts to define the scale and extent of the assessment, as follows:
- Rule 1: Include highway links where traffic flows will increase by more than 30% (or where the number of HGVs will increase by more than 30%); and
  - Rule 2: Include any other specifically sensitive areas where traffic flows have increased by 10% or more.
- 14.4.17 It is notable that, on roads where baseline traffic flows are low, any increase in traffic flow may result in a predicted increase that would be higher than the two rules set out in the IEMA Guidelines. However, it is important to consider any overall increase in road traffic in relation to the capacity of the road.
- 14.4.18 The IEMA Guidelines state that 'For many effects there are no simple rules or formulae which define the thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed up by data or quantified information wherever possible', and 'those preparing the Environmental Statement will need to make it clear how they have defined whether a change is considered significant or not' (paragraph 4.5).
- 14.4.19 The IEMA Guidelines identify general thresholds for traffic flow increases of 10% and 30%. Where the predicted increase in traffic / HGV flow is lower than these thresholds, then the significance of the effects should be considered to be low or not significant and further detailed assessment is not required. However, to ensure a robust assessment of the increase in traffic flows in environmental terms, the following criteria defined in Tables 14.2 and 14.3 will be used to determine magnitude of impact and receptor sensitivity respectively.



**Table 14.2: Sensitivity/Importance of Identified Receptor**

Sensitivity	Definition
High	Receptors of greatest sensitivity to traffic flows, such as schools, playgrounds, accident blackspots, retirement homes, areas with no footways with high pedestrian footfall, congested areas
Medium	Receptors with some sensitivity to traffic flow, such as conservation areas, listed buildings, tourist attractions, and residential areas
Low	Receptors with low sensitivity to traffic flows, and those distant from affected roads
Negligible	Receptors with no material sensitivity to traffic flows

**Table 14.3: Magnitude of Change**

Sensitivity	Definition
High	Changes to peak or 24hr traffic within the Study Area by 30% or more
Medium	Changes to peak or 24hr traffic within the Study Area by between 10% and 30%
Low	Changes to peak or 24hr traffic within the Study Area by between 5% and 10%
Negligible	Changes to peak or 24hr traffic within the Study Area up to 5%
Neutral	No Change (+/- daily Variation)

### Significance of Effect

14.4.20 The magnitude of change and receptor sensitivity have been compared to determine the overall significance of effects. This is shown in Table 14.4.

14.4.21 There are four categories demonstrating the significance of the effect. These can be adverse or beneficial:

- Negligible – Very little change from baseline conditions;
- Minor – A minor shift away from baseline conditions;
- Moderate – A material shift away from the baseline conditions; and
- Major –Substantial alteration to baseline conditions.

**Table 14.4: Significance of Potential Effects**

Magnitude of Change	Sensitivity of Receptor				
		High	Medium	Low	Negligible
High		Major	Major	Moderate	Negligible
Medium		Major	Moderate	Minor/Moderate	Negligible
Low		Moderate	Minor/Moderate	Minor	Negligible
Negligible		Negligible	Negligible	Negligible	Negligible

14.4.22 It is considered that only moderate and major effects are significant for the purpose of this assessment.

14.4.23 The effects can be temporary or permanent and short, medium or long term in duration. The duration of these effects are considered to be as follows:

- A short term effect – an effect that will be experienced for 0-5 years;
- A medium term effect – an effect that will be experienced for 5-15 years; and
- A long term effect – an effect that will be experienced for 15 years or longer.

#### Limitations and Assumptions

14.4.24 A number of assumptions are made when forecasting the traffic generation of the Scheme, both during construction and operation. However, these forecasts have been developed by the Applicant and their consultants based on professional judgement and derived from experience with other developments similar in scale and nature to the Development. Therefore, they are considered to represent a realistic estimation of traffic generation.

## **14.5 Baseline Conditions**

### The Site and Context

14.5.1 The Site is split into three areas; Cottam 1, 2, and 3. Each area encompasses a number of separate land parcels.

14.5.2 The electricity generated by the Scheme will be imported and exported via new underground cables to the National Grid at the existing substation at Cottam Power Station. At present, the final cable route is yet to be determined. However, a cable corridor has been identified. The corridor shown is wider than is required but it is still subject to on-going assessment work which will be used to refine the cable route which will inform the route proposed in the DCO application submission.

- 14.5.3 These elements will be refined prior to submission of the DCO application. Therefore, the assessment work undertaken for the cable route to date is in general less advanced than for the three Solar Panel Sites.
- 14.5.4 Cottam 1 is the largest of the three areas and comprises of a number of individual land parcels. The area is located to the north of the A1500, a single carriageway road running in an east to west alignment, whereby the national speed limit applies. A number of more rural roads also operate throughout the Site, including the B1398, Stow Lane and Willingham Road.
- 14.5.5 Cottam 2 is located to the north of the A631. Again, this is a single carriageway road running in an east to west alignment, whereby the national speed limit applies.
- 14.5.6 Cottam 3 is located to the north of the B1205 Kirton Road and the east of Blyton village. The B1205 is also a single carriageway road running in an east to west alignment, whereby the national speed limit applies.

### Walking and Cycling

#### **Walking**

- 14.5.7 Due to the rural nature of many of the access roads that make up the study area, there are limited pedestrian specific facilities. The pedestrian features are summarised below:
- Cottam 1 – There are no footways present on the A1500 Till Bridge Lane, Stow Lane, Ingham Road, Fillingham Lane, Willingham Road and South Lane. A footway is located on the east side of Thorpe Lane to the north of the A1500 junction
  - Cottam 2 – There are no footways present on the A631, nor on the unnamed rural road that connects to the Site.
  - Cottam 3 - There are no footways present on the B1205. Station Road does have a footway on one side of the carriageway.

#### **Public Rights of Way**

- 14.5.8 There are a number of public rights of way that run through or nearby each area. These are summarised in Table 14.5.

**Table 14.5: Public Rights of Way**

Public Right of Way	Cottam Area	Route
Bridleway – TLF/31/2	Cottam 1	Ingham Road south towards Thorpe Lane.
Bridleway – Fill/85/1 and Fill/767/1	Cottam 1	This route heads goes from Glentworth Grange to Willingham Road
Bridleway – Fill/86/1	Cottam 1	This route goes from Willingham Road to Long Lane by Ingham.
Footpath Corr/22/1	Cottam 2	This route goes from the unnamed rural road south of Aisby to Mill Mere Road.
Footpath – Pilh/20/1	Cottam 3	This route goes from Station Road to the unnamed rural road west of Bonsdale.

### Cycling

- 14.5.9 There is no dedicated cycling infrastructure in the area surrounding any of the areas that make up the Site and Study Area.

### Public Transport

#### Bus

- 14.5.10 There are a number of bus services operating within the vicinity of the Site. A summary of the existing bus services can be found in Table 14.6.

**Table 14.6 Summary of Existing Bus Services**

Route Number	Nearest Bus Stop	Nearest Area	Route
103	Post Office	Cottam 2	Lincoln – Kirton in Lindsey
354	Harpwell Grange	Cottam 2	Gainsborough - Lincoln
367	Old Station House	Cottam 3	Gainsborough – Kirton in Lindsey
601	Monson Road	Cottam 3	Scunthorpe - Gainsborough
906	Till Bridge Lane Lane End	Cottam 1	Welton – Saxilby

- 14.5.11 Table 14.6 shows that there are a range of bus services located near to all areas of the Site.

## **Rail**

- 14.5.12 The nearest railway stations are Saxilby Train Station and Gainsborough Train Station. Saxilby Train Station is located approximately six miles west of Lincoln and is managed by Northern Rail. The station has services running approximately every 30 minutes to destinations such as Leeds, Peterborough and Lincoln.
- 14.5.13 Gainsborough Train Station is located approximately 14 miles south of Scunthorpe and is also managed by Northern Rail. The station has services running approximately every 30-60 minutes to destinations such as Lincoln, Retford and Leeds.

## Local Highway Network

- 14.5.14 An overview of the local highway network is provided below.

### **A15**

- 14.5.15 The A15 is a single carriageway two-way road subject to the national speed limit which connects the M180 to the north with the A46 to the south. The road has a predominantly straight alignment throughout.

### **A1500 Till Bridge Lane**

- 14.5.16 The A1500 is subject to the national speed limit and generally has a straight alignment. It connects the A15 to the east to the village of Sturton by Stow to the west.

### **Thorpe Lane**

- 14.5.17 Thorpe Lane is a rural single lane road that has no central markings. It has a footway running along the eastern side of the road and is subject to the national speed limit.

### **Stow Lane**

- 14.5.18 Stow Lane is a rural single lane road that has no central markings and is subject to the national speed limit. Stow Lane connects Ingham Lane to the east to Ingham Road to the west.

### **Ingham Road**

- 14.5.19 Ingham Road, is a rural single lane road that has no central markings and is subject to the national speed limit. Ingham Road connects Stow Lane to the east to the village of Stow to the west.

### **Fleets Lane**

- 14.5.20 Fleets Lane is a narrow rural single lane road that has no central markings and is subject to the national speed limit. Ingham Road connects Ingham Road to the north to Fleets Road to the south.

### **South Lane**

- 14.5.21 South Lane is a rural narrow single lane road that has no central markings and is subject to the national speed limit.

### **Fillingham Lane**

- 14.5.22 Fillingham Lane is a rural single lane road that generally has a straight alignment. The road has no central markings and is subject to the national speed limit.

### **Willingham Road**

- 14.5.23 Willingham Road is a rural single lane road that generally has a straight alignment. The road has no central markings and is subject to the national speed limit. Willingham Road connects the village of Fillingham to the east to Fillingham Lane to the west.

### **A631**

- 14.5.24 The A631, is a single carriageway where the national speed limit applies. The A631, connects the A157 to the east, to the A630 to the west.

### **Unnamed Rural Road north of A631**

- 14.5.25 The unnamed rural road that lies north of the A631, is a narrow road with no central markings where the national speed limit applies.

### **B1205**

- 14.5.26 The B1205 is a single carriageway where the national speed limit applies. The B1205 connects the A15 to the east to the village of Blyton to the west.

### **Station Road**

- 14.5.27 Station Road is a single lane road that has a footway located on the eastern side. It connects Pilham Lane to the south to Kirton Road to the north.

### Traffic Flows

- 14.5.28 Automatic Traffic Count Surveys have been undertaken for all roads within the Study Area. These were undertaken between 2nd November 2021 and 8th November

2021. At the time, there were no Covid-19 restrictions in place. In addition, DfT data has been reviewed for the strategic road network, including the A15 and A631. The average weekday two-way traffic count for the main roads within the vicinity of the Site is set out in Table 14.7.

**Table 14.7: Baseline Traffic Flows – Average Weekday (24 hr), Two-Way**

Link	Cottam Area	Total Vehicles	%HGV
A15	Cottam 1,2,3	12,661	17%
Ingham Road	Cottam 1	759	20%
Fleets Lane	Cottam 1	63	25%
East of Coates	Cottam 1	8	23%
Willingham Road	Cottam 1	122	25%
Stow Lane	Cottam 1	688	25%
Thorpe Lane	Cottam 1	83	37%
A631	Cottam 2	9,958	6%
Corringham (North of A631)	Cottam 2	70	3%
Pilham Lane	Cottam 3	92	18%
Kirton Road	Cottam 3	1,606	19%
Station Road	Cottam 3	2,159	18%

14.5.29 The traffic flows in Table 14.7 show that HGVs are already present on all local roads, which demonstrates a precedent for HGV use, and shows that that they are suitable for construction traffic.

#### Road Safety

14.5.30 Statistics showing Personal Injury Collisions on the local road network have been obtained for the most recent five-year period up to and including 2021.

14.5.31 A breakdown of the accidents is shown in Table 14.8.

**Table 14.8 Personal Injury Accident Data**

Location Junction	Incident Severity		
	Slight	Serious	Fatal
<b>Cottam 1</b>			
A15/Till Bridge Ln Junction	0	1	0
A1500 from A15 to Thorpe Lane	4	1	0
A1500/Thorpe Lane Junction	0	0	0
Thorpe Lane	0	0	0
A15/Ingham Lane Junction	2	0	0
Ingham Lane from A15 to B1398	0	0	0
Ingham Lane/B1398 Junction	0	0	0

B1398/Stow Lane/Ingham Road from Ingham Lane to Fleets Lane	2	0	0
Ingham Road/Fleets Lane Junction	0	0	0
South Lane	0	0	0
South Lane/Fillingham Lane Junction	0	0	0
Fillingham Lane from South Lane to Willingham Road	0	0	0
Willingham Road from Fillingham Lane to Site access	0	0	0
<b>Cottam 2</b>			
A631/A15 Junction	1	0	0
A631 from A15 to unnamed rural road	15	4	1
Unnamed Rural road from A631 to Site access	0	0	0
<b>Cottam 3</b>			
B1205/A15 Junction	0	0	0
B1205 from A15 to Station Road	15	5	2
B1205/Station Road Junction	0	0	0
Station Road	0	0	0

- 14.5.32 Table 14.8 indicates a total of 39 slight incidents, 11 serious and three fatal accidents occurred on the junctions/link roads surrounding the Site. Based on the information available, there is no identified pattern of accidents.

#### Future Baseline

- 14.5.33 There are currently no planned highway works within the study area.
- 14.5.34 Traffic flows may change slightly as a result of cumulative developments in the area. This is discussed further in the 'Cumulative Effects' section of this chapter.

## **14.6 Identification and Evaluation of Key Effects**

### Construction Phase

- 14.6.1 This section summarises the likely significant effects associated with the movement of vehicles during the construction phase. Whilst it is expected that the total construction period will be between 18 and 24 months, the transport chapter and CTMP's assume a worst case scenario of an 18 month period (78 weeks). Therefore, all effects will be short-term and temporary.

### **Traffic Flows**

- 14.6.2 Construction activities are likely to be carried out Monday to Friday 07:00-18:00 and between 08:00 and 13:30 on Saturdays. However, some activities may be required outside of these times (such as the delivery of abnormal loads, night time working for cable construction works in public highways or horizontal direction drilling activities). Where possible, construction deliveries will be coordinated to avoid HGV



movements during the traditional AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00)

- 14.6.3 The construction phase for the solar element of the Scheme includes the preparation of the Site, installing the access tracks, erection of security fencing, assembly and erection of the PV arrays, installation of the inverters/transformers and grid connection.
- 14.6.4 The construction of the energy storage system element of the Scheme will include the preparation of the Site, installation of the access roads, erection of security fencing, assembly of the battery system, and installation of the switch-room and grid connection.
- 14.6.5 The components which are required to construct the solar farm element of the Scheme will arrive by 16.5m long articulated and 10m rigid vehicles. Based on experience, there is typically around 18 HGV deliveries per MW installed for the construction of a solar farm. Based on this, the forecast HGV trips are set out in Table 14.9 below.

**Table 14.9 Forecast Construction Vehicle Trip Generation (HGV)**

Area	Forecast Construction Vehicle Movements	Average per Day*
Cottam 1	10,800 (21,600 two way)	23 (46 two way)
Cottam 2	1,440 (2,880 two way)	3 (6 two way)
Cottam 3	1,800 (3,600 two way)	4 (8 two way)
Total	14,040 (28,080 two way)	30 (60 two way)

\* Based on a 78 week construction period, equating to 468 working days (six working days per week)

- 14.6.6 At this stage, it is envisaged that there will be approximately 30 HGV deliveries per day over the construction period (60 two-way movements) across all three areas that make up the Site.
- 14.6.7 A temporary construction compound will be provided in each area, and will provide storage, parking for contractors and turning for HGVs.
- 14.6.8 Up to 400 construction workers are anticipated to be on Site during an average day throughout the construction period. The location of where staff will travel from is unknown at this stage, as this will depend on the appointed contractor. However, it is envisaged that the majority of the non-local workforce will stay at local accommodation and be transported to the Site by minibuses to minimise the impact on the strategic and local highway network. In addition, a construction worker Travel

Plan will form part of the CTMP. This will set out measures to encourage workers to travel to the Site as sustainably as possible (e.g. minibus, car share etc.).

- 14.6.9 As a robust judgement, it is assumed that there could be 200 vehicle arrivals and 200 vehicle departures associated with construction workers per day by car/LGV (400 two-way trips). These are broken down by area on a proportional basis in Table 14.10

**Table 14.10 Forecast Construction Vehicle Trip Generation (Construction Workers - LGV)**

Area	Forecast Construction Worker Movements Average per Day (LGV)
Cottam 1	150 (300 two way)
Cottam 2	22 (44 two way)
Cottam 3	28 (56 two way)
Total	200 (400 two way)

- 14.6.10 Where possible, construction deliveries will be coordinated to avoid HGV movements during the traditional AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00). Due to the construction hours (07:00-18:00) at the Site, construction worker travel will occur outside of the peak hours. As such, there is unlikely to be many, if any, peak hour trips associated with the Site. More information on this is set out within the CTMP.
- 14.6.11 The grid connection element of the construction phase will involve the installation of a cable into a trench in the highway. This element will not generate significant traffic flows.
- 14.6.12 During the temporary construction phase, the following construction access points will be required.
- Cottam 1: 11 access junctions including:
    - 1 from Thorpe Lane;
    - 1 from Stow Lane;
    - 1 from Ingham Road;
    - 2 from Fleets Lane;
    - 1 from South Lane;
    - 3 from Willingham Road;

- 2 from an existing farm track to the west of Coates.
- Cottam 2: 1 access junction from the A631 to the east of Corringham;
- Cottam 3: 2 access junctions from the B1205, to the east of Blyton.

14.6.13 Where construction vehicle accesses utilise existing agricultural access points or tracks, the access points will be formalised and widened if necessary. Swept path analysis will be included within the CTMP to demonstrate that they can operate safely.

14.6.14 All construction vehicles will access the Site via the A15, from either the M180 Motorway to the north, or the A46 to the south. From the A15, construction vehicles will take the following routes to the Site:

- Cottam 1 – either the A1500 Till Bridge Lane or Ingham Lane/Stow Lane;
- Cottam 2 – A631;
- Cottam 3 – B1205.

14.6.15 The construction traffic generation set out in Table 14.9 and Table 14.10 has been applied to the baseline traffic flows set out in Table 14.7 to determine the effect of construction traffic on the links within the study area. To account for construction worker trips, 100 two-way trips have also been added to the baseline traffic flows. These will be car/LGV trips and not HGV trips.

14.6.16 The baseline and baseline plus construction traffic flows are shown in Table 14.11.

**Table 14.11: Baseline Two-Way Traffic Flows (AADT) plus Construction Traffic**

Cottam Area	Link	Baseline			Baseline plus Construction			% Change from Baseline	
		AAD T	HGVs	HGV %	AAD T	HGVs	HGV %	AADT	HGVs
1	A15	12,661	2,116	17%	12,891	2,146	17%	2%	1%
1	Ingham Road	759	153	20%	798	157	20%	5%	3%
1	Fleets Lane	63	16	25%	89	20	22%	41%	25%
1	Road East of Coates	8	2	25%	21	5	24%	163%	150%
1	Willingham Road	122	30	25%	161	34	21%	32%	13%

Cottam Area	Link	Baseline			Baseline plus Construction			% Change from Baseline	
		AAD T	HGVs	HGV %	AAD T	HGVs	HGV %	AAADT	HGVs
1	Stow Lane	688	170	25%	766	174	23%	11%	2%
1	Thorpe Lane	83	31	37%	96	35	36%	16%	13%
2	A631	9,958	597	6%	9,980	599	6%	1%	1%
2	Corringham (North of A631)	70	2	3%	92	3	3%	31%	50%
3	Pilham Lane	92	17	18%	101	18	18%	10%	6%
3	Kirton Road	1,606	301	19%	1,634	302	18%	2%	1%
3	Station Road	2,159	391	18%	2,168	393	18%	1%	1%

- 14.6.17 As stated in the Sensitivity of Receptor and Magnitude of Change section, the two rules set out in the IEMA Guidelines require further assessment where traffic flows/HGVs increase by more than 30% (or 10% for a sensitive area).
- 14.6.18 As shown in Table 14.11, the addition of 200 car/LGV movements plus 30 HGV movements to the highway network over a daily period will not exceed this threshold on the A15, Ingham Road, Stow Lane, Thorpe Lane, A631, Pilham Lane, Kirton Road and Station Road. Therefore, there will not be a significant environmental effect as a result of construction vehicle traffic on these roads and therefore, no further assessment is required.
- 14.6.19 On Fleets Lane, Road east of Coates, Willingham Road and Corringham Road north of the A631, there could be up to larger increases in AAADT from a baseline. However, these links have a low number of baseline movements, which results in a high percentage change with any increase in traffic volumes.
- 14.6.20 A review of the likely significant environmental effects in relation to transport and access during the Scheme's construction phase is set out below.

### Accidents and Safety

- 14.6.21 During the most recent five-year period (up to and including 2021), there have been a total of 53 Personal Injury Collisions (PICs). Of these three were fatal, 39 were

'slight' and 11 were 'serious'. Based on the information available, there is no identified pattern of accidents. This is set out in detail in Table 14.8.

- 14.6.22 Given the low number of additional trips to the network during the construction phase, as detailed in Table 14.11, there is unlikely to be a material effect on accidents and safety. In light of this, the likely significant effect of the construction traffic on accidents and safety in the study area is considered to be negligible and temporary, which is not significant.

### **Severance**

- 14.6.23 None of the roads used are considered to act as a barrier that separate communities. The addition of construction traffic will not change this.
- 14.6.24 Therefore, the likely significant effect on severance during the construction phase is considered to be negligible and temporary which is not significant.

### **Driver Delay**

- 14.6.25 The IEMA Guidelines state that 'delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system'.
- 14.6.26 Capacity assessment on local junctions are not proposed as part of the assessment. However, through the CTMP, construction vehicles will be coordinated to avoid peak hour travel, the period where capacity constraints may occur, and, where possible, there will be no construction traffic on roads within the study area between 08:00-09:00 or 17:00-18:00.
- 14.6.27 As such, the likely significant effect of the construction traffic on driver delay is considered to be negligible and temporary, which is not significant.

### **Pedestrian Delay (to include Cyclists)**

- 14.6.28 The level of pedestrian and cyclist activity on the roads surrounding the Site is low. Public rights of way will remain open during the construction phase. There may be some slight delay to pedestrian and cyclist movement if a construction vehicle is crossing the public right of way, but this is not likely to be material, an only in isolated locations.
- 14.6.29 Therefore, the likely significant effect of the construction traffic on pedestrian delay is considered to be negligible and temporary, which is not significant.

### **Pedestrian Amenity (including Fear and Intimidation and to include Cyclists)**

- 14.6.30 As set out above, the level of pedestrian activity on the roads surrounding the Site is very low meaning that the sensitivity receptor is low. However, it is acknowledged that the addition of HGVs to the network will affect the relative pleasantness of any pedestrian and cyclist journeys in the area. It is also acknowledged that a number of Public Rights of Way operate through the Site.
- 14.6.31 Whilst these will remain open during the construction phase, there will be some effect on the relevant pleasantness of pedestrian journeys in these locations.
- 14.6.32 In light of this, it is considered that the likely significant effect of the construction traffic to pedestrian and cyclist amenity will be minor adverse and temporary, which is not significant.

### **Hazardous Loads**

- 14.6.33 Some deliveries to the Site during the construction phase will be regarded as 'hazardous loads'. These include the deliveries of lithium-ion batteries, transformer oil and insulation gas. All regulations for the movement of hazardous loads will be followed, and the appropriate documentation will be obtained.
- 14.6.34 There will be some abnormal loads to transport the transformer for the 132kv substation. An abnormal load is one where the vehicle exceeds 44 tonnes, the width is over 2.9m or the length is more than 18.65m. These movements will be managed so that the potential effects are mitigated appropriately. Additional details will be provided in the ES and CTMP. An initial Abnormal Loads report has been prepared by Wynns Limited (see Appendix 14.2).
- 14.6.35 Overall, it is considered that the likely significant effect of the construction traffic on hazardous loads will be negligible and temporary, which is not significant.

### Summary of Effects during Construction

- 14.6.36 The likely significant effects of the Development during the construction phase, prior to the implementation of mitigation measures, are summarised in Table 14.12.

**Table 14.12: Summary of Effects during the Construction Phase**

<b>Criteria</b>	<b>Significant of Effect for all roads surrounding the different Sites</b>	<b>Duration</b>
Accidents and Safety	Negligible	Short Term/Temporary
Severance	Negligible	Short Term/Temporary

Criteria	Significant of Effect for all roads surrounding the different Sites	Duration
Driver Delay	Negligible	Short Term/Temporary
Pedestrian Delay	Moderate	Short Term/Temporary
Pedestrian Amenity	Minor Adverse	Short Term/Temporary
Hazardous Loads	Negligible	Short Term/Temporary

### Operational Phase

- 14.6.37 During the Development's operational phase, there are anticipated to be approximately two visits to the Site per month for maintenance (less than one a day on average). These would typically be made by light van or 4x4 type vehicles. Whilst the Site compound will have been removed during the construction phase, space will remain within the Site on the access tracks for such a vehicle to turn around to ensure that reversing will not occur onto the highway.
- 14.6.38 In light of this, effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads during the operational phase of the Development are considered to be negligible or no significant effect. The effects will be long-term, as the design life of the Development is anticipated to be 40 years.

### Management/Mitigation Measures

#### **Construction Phase**

- 14.6.39 An initial Outline CTMP is submitted with the PEIR at **Appendix 14.1** and will continue to evolve following statutory consultation and for the DCO application stage. The CTMP will be secured by a requirement of the DCO. The outline CTMP will provide a framework for the management of construction vehicle movements to and from the Site, to ensure that the effects of the temporary construction phase on the local highway network are minimised. The outline CTMP will set out construction access arrangements, construction vehicle routing, construction vehicle trip generation, and the management/mitigation measures. Any requirements for abnormal loads to be delivered to the Sites during construction (for elements such as transformers), will be determined through the design process, in consultation with the appropriate statutory consultees, and addressed in the ES.
- 14.6.40 A number of mitigation measures will be set out within the outline CTMP and ES Chapter. These will include, but will not be limited to the following:

- Signs to direct construction vehicles associated with the development will be installed along the agreed construction traffic route. Delivery drivers, contractors and visitors will be provided with a route plan in advance of delivering to Site to ensure that vehicles follow the identified route;
- Advisory signs informing contractors and visitors that parking is not permitted on-street in the vicinity of the Site or on the Site access road;
- All signage on the designated route will be inspected twice daily by the Site Manager (once in the morning and once at lunchtime), to ensure they are kept in a well maintained condition and located in safe and appropriate locations;
- A compound area for contractors will be set up on-Site including appropriate parking spaces. Contractors and visitors will be advised that parking facilities will be provided on-Site in advance of visiting the Site and that they should not park on-street;
- A wheel wash facility will be provided ahead of exiting the Site allowing vehicles to be hosed down so that no construction vehicles will take mud or debris onto the local highway network;
- A road sweeper will be provided for surrounding local roads along the designated route to alleviate any residual debris generated during the construction phase, as required;
- The Site will be secured at all times with Heras fencing;
- A requirement for engines to be switched off on-Site when not in use;
- spraying of areas with water supplied as and when conditions dictate to prevent the spread of dust;
- Vehicles carrying waste material off-Site to be sheeted;
- Banksman will be provided at the Site access junctions to indicate to construction traffic when it is safe for them to enter and exit the Site;
- All residents in the vicinity of the Site along the designated route will be provided with contact details of the Site Manager, which will also be provided on a Site-board at the Site access and egress junctions; and
- Agreement to a Road Condition Survey with the local highway authority.



### **Operational Phase**

- 14.6.41 No additional mitigation is required during the operational phase of the Scheme due to the negligible transport effect of Site maintenance.

#### Residual Effects

### **Construction Phase**

- 14.6.42 For the construction phase of the Scheme temporary negligible residual effects are anticipated on accidents and safety, severance, pedestrian and driver delay and hazardous loads, which is not significant. Temporary minor adverse residual effects on pedestrian amenity are also anticipated, which is not significant.

### **Operational Phase**

- 14.6.43 For the operational phase of the Development, residual negligible effects are anticipated on accidents and safety, severance, pedestrian delay and amenity, driver delay and hazardous loads, which is not significant.

#### Decommissioning Phase

- 14.6.44 As stated in the 'Likely Significant Effects' section, the Scheme will have an estimated design life of 40 years. At the end of its operational life the Scheme will be decommissioned. The number of vehicles associated with the decommissioning phase is not anticipated to exceed the number set out for the construction phase, as set out in Table 14.9 and Table 14.10. An Outline Decommissioning Plan will be prepared and submitted to the relevant local planning authority for approval. This will be secured by a requirement of the DCO.
- 14.6.45 In light of this, effects on accidents and safety, severance, driver delay, pedestrian delay and amenity and hazardous loads prior to the implementation of mitigation measures for the decommissioning phase are considered to be the same as shown in Table 14.12, as a worst-case assessment. The effects will also be short term and temporary. Mitigation during the decommissioning phase will broadly follow what is set out for the construction phase. For the decommissioning phase of the Development, temporary negligible residual effects are anticipated on accidents and safety, severance, pedestrian and driver delay and hazardous loads, which is not significant. Temporary minor adverse residual effects on pedestrian amenity are also anticipated, which is not significant.

## **14.7 Cumulative Effects**

- 14.7.1 The following developments have been identified by reviewing planning applications from the host authorities, along with the NSIP's on the Planning Inspectorate and any comments from the scoping opinions for projects considered to be relevant in

the assessment of cumulative effects. The developments and their associated constructions routes and traffic flows are summarised below.

14.7.2 The following developments, which are considered to have a transport effect on the Study Area, have been reviewed for the cumulative assessment:

- West Burton Solar Project
- Gate Burton Energy Park
- EDF West Burton C
- Decommissioning of West Burton A
- Saxilby Heights
- Development at Land off Sturton Road
- Blyton Driving Centre
- Wood Lane Solar Farm

14.7.3 The following assessment only includes applications anticipated to generate trips on the links in the study area at the same time as the Scheme, as these are considered to be the developments with the most potential to give rise to cumulative effects.

14.7.4 Traffic figures for the Gate Burton proposal are currently not available but will be fully assessed in the ES.

#### **West Burton Solar Project**

14.7.5 West Burton project has four associated Sites, a substation and a cable corridor.

14.7.6 All construction vehicles will access the West Burton Solar Project Site via the A15, from either the M180 Motorway to the north, or the A46 to the south. From the A15, construction vehicles will take the following routes to the West Burton Solar Project Site:

14.7.7 The proposed construction vehicle routes to each area are summarised below:

- West Burton 1 and 3 – via the A15 and A1500;
- West Burton 2 – via the A46, A57 and B1241; and
- West Burton 4 – via the A1(M), A614 and A631.

14.7.8 The associated 24-hour Traffic Flows that may impact the highway network used in the Scheme, for West Burton Solar Project are shown in Table 14.13.

**Table 14.13 West Burton Solar Project Traffic Flows**

Link	Cottam Area	AADT	HGV	%HGV
A15	WB1,2,3, 4	30	30	100%
A631	WB 2	22	2	10%

**EDF West Burton C 299MW gas fired generating capacity**

14.7.9 All construction vehicles will access EDF West Burton C via the existing West Burton Power Station entrance off of Gainsborough Road. All HGVs will then use the following route:

- EDF West Burton C - Gainsborough Road, Sturton Road, Gainsborough Road and Saundby Road.

14.7.10 The associated 24-hour Traffic Flows that may impact the highway network used in the Cottam Solar project, for EDF West Burton C are shown in Table 14.14. This data was obtained from Appendix 7A of the Transport Assessment (April 2019) prepared by AECOM.

**Table 14.14 EDF West Burton C Traffic Flows**

Link	AADT	HGV	%HGV
A631	226	56	25%

**Wood Lane Solar Farm**

14.7.11 All construction vehicles will access the Site via the following route:

- A620; A631; A631; A638

14.7.12 The associated 24-hour Traffic Flows that may impact the highway network used in the Cottam Solar project, for Wood Lane Solar Farm are shown in Table 14.15. This data was obtained from the associated Transport Assessment.

**Table 14.15 Wood Lane Solar Farm Traffic Flows**

Link	AADT	HGV	%HGV
A631	40	40	100%
A631	40	40	100%

- 14.7.13 The cumulative construction traffic generation set out in Tables 14.13 – 14.15 has been applied to the baseline traffic flows set out in Table 14.7 and baseline plus construction flows set out in Table 14.11, to determine the cumulative effect of the construction traffic for the Scheme on the links within the study area, in combination with the schemes identified as having the potential to generate cumulative effect.
- 14.7.14 The baseline and baseline plus cumulative effects traffic flows are shown in Table 14.16.

**Table 14.16 Baseline plus Cumulative Effects on Traffic Flows**

Cottam Area	Link	Baseline			Baseline plus Cumulative			% Change from Baseline	
		AADT	HGVs	HGV %	AADT	HGVs	HGV %	AADT	HGVs
1	A15	12,661	2,116	17%	12,921	2,176	17%	2%	3%
1	Ingham Road	759	153	20%	798	157	20%	5%	3%
1	Fleets Lane	63	16	25%	89	20	22%	41%	25%
1	Road East of Coates	8	2	25%	21	5	24%	163%	150%
1	Willingham Road	122	30	25%	161	34	21%	32%	13%
1	Stow Lane	688	170	25%	766	174	23%	11%	2%
1	Thorpe Lane	83	31	37%	96	35	36%	16%	13%
2	A631	9,958	597	6%	10,308	737	7%	4%	23%
2	Corringham (North of A631)	70	2	3%	92	3	3%	31%	50%
3	Pilham Lane	92	17	18%	101	18	18%	10%	6%
3	Kirton Road	1,606	301	19%	1,634	302	18%	2%	1%
3	Station Road	2,159	391	18%	2,168	393	18%	1%	1%

- 14.7.15 As stated in the 'Assessment of Significance' section, the two rules set out in the IEMA Guidelines require further assessment where traffic flows/HGVs increase by more than 30% (or 10% for a sensitive area).
- 14.7.16 As shown in Table 14.16, the addition of 200 car/LGV movements plus 30 HGV movements to the highway network over a daily period will not exceed this threshold on the A15, Ingham Road, Stow Lane, Thorpe Lane, A631, Pilham Lane, Kirton Road and Station Road. Therefore, based on the data available, there will not be a significant environmental effect as a result of construction vehicle traffic on these roads and therefore, no further assessment is required.
- 14.7.17 On Fleets Lane, Road east of Coates, Willingham Road and Corringham Road north of the A631, there could be up to larger increases in AADT from a baseline. However, these links have a low number of baseline movements, which results in a high percentage change with any increase in traffic volumes.
- 14.7.18 A review of the likely significant environmental effects in relation to transport and access during the Scheme's construction phase, taking into account cumulative effects, is set out in the sections below.

### **Accidents and Safety**

- 14.7.19 A total of 53 PICs were recorded over the most recent five-year period. Of these three were fatal, 39 were 'slight' and 11 were 'serious'. Based on the information available, there is no identified pattern of accidents. This is set out in detail in Table 14.8
- 14.7.20 Given the low number of additional trips to the network during the construction phase, as detailed in Table 14.9, there is unlikely to be a material effect on accidents and safety, even when taking into account cumulative schemes. In light of this, the likely significant effect of the construction traffic on accidents and safety in the study area is still considered to be negligible and temporary.

### **Severance**

- 14.7.21 None of the roads used are considered to act as a barrier that separate communities. The addition of construction traffic will not change this.
- 14.7.22 Additional traffic associated with the cumulative scheme will not change, the likely significant effect of the on severance during the construction phase. Therefore, it is considered to be negligible and temporary, which is not significant.

### **Driver Delay**

- 14.7.23 The IEMA Guidelines state that 'delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system'.
- 14.7.24 Capacity assessment on local junctions are not proposed as part of the assessment. However, through the CTMP, construction vehicles will be coordinated to avoid peak hour travel, the period where capacity constraints may occur, and there will be no construction traffic on roads within the study area between 08:00-09:00 or 17:00-18:00.
- 14.7.25 As such, the likely cumulative effect on driver delay is considered to be negligible, which is not significant.

### **Pedestrian Delay (to include Cyclists)**

- 14.7.26 The level of pedestrian and cyclist activity on the roads surrounding the Site is low. Public rights of way will remain open during the construction phase. There may be some slight delay to pedestrian and cyclist movement if a construction vehicle is crossing the public right of way, but this is not likely to be material, an only in isolated locations. Traffic associated with cumulative schemes is unlikely to have a significant effect on pedestrian and cyclist delay.
- 14.7.27 Therefore, the likely cumulative effect on pedestrian and cyclist delay is considered to be negligible, which is not significant.

### **Pedestrian Amenity (including Fear and Intimidation and to include Cyclists)**

- 14.7.28 As set out above, the level of pedestrian and cyclist activity on the roads surrounding the Site is very low meaning that the sensitivity receptor is low. However, it is acknowledged that the addition of HGVs to the network and additional traffic associated with the cumulative schemes will affect the relative pleasantness of any pedestrian and cyclist journeys in the area. It is also acknowledged that a number of Public Rights of Way operate through the Site. Whilst the intention is for these Public Rights of Way to remain open during the construction phase, there will be some effect on the relevant pleasantness of pedestrian and cyclist journeys in these locations.
- 14.7.29 In light of this, it is considered that the likely cumulative effect to pedestrian and cyclist amenity will be minor adverse, which is not significant.

### **Hazardous Loads**

- 14.7.30 Some deliveries to the Site during the construction phase will be regarded as 'hazardous loads'. These include the deliveries of lithium-ion batteries, transformer

oil and insulation gas. All regulations for the movement of hazardous loads will be followed, and the appropriate documentation will be obtained. There are likely to be some hazardous loads associated with other energy schemes, such as West Burton. All regulations for these deliveries will have to be followed.

- 14.7.31 There will be some abnormal loads to transport the transformer for the 132kv substation. An abnormal load is one where the vehicle exceeds 44 tonnes, the width is over 2.9m or the length is more than 18.65m. These movements will be managed. Additional details will be provided in the ES and CTMP. Other energy development, in particular West Burton Solar Project and Gate Burton Solar Project, will also have infrequent abnormal load movements that will be managed.
- 14.7.32 Overall, as all regulations will be followed, and there is no identified highway safety issue on the routes to the Site, it is considered that the likely significant cumulative effects on hazardous loads will be negligible, which is not significant.

### Summary of Cumulative Effects during Construction

- 14.7.33 The likely significant effects of the Scheme during the construction phase, prior to the implementation of mitigation measures, are summarised in Table 14.17.

**Table 14.17: Summary of Effects during the Construction Phase**

Criteria	Significant of Effect for all roads surrounding the different Site	Duration
Accidents and Safety	Negligible	Short Term/Temporary
Severance	Negligible	Short Term/Temporary
Driver Delay	Negligible	Short Term/Temporary
Pedestrian Delay	Negligible	Short Term/Temporary
Pedestrian Amenity	Minor Adverse	Short Term/Temporary
Hazardous Loads	Negligible	Short Term/Temporary

## 14.8 Summary of Effects

- 14.8.1 Table 14.18 contains a summary of the likely significant effects of the Scheme.

**Table 14.18: Summary of Likely Significant Effects**

Potential Effect	Nature of Effect (Permanent/ Temporary)	Significance (Major/Moderate / Minor) (Beneficial/ Adverse/ Negligible)	Mitigation / Enhancement Measures	Geographical Importance*						Residual Effects	Cumulative Effects	
				I	UK	E	R	C	B			L
<b>Construction/Decommissioning Phase</b>												
Effects on Accidents and Safety	Temporary	Negligible	Implementation of CTMP							X	Negligible	Negligible
Effects on Severance	Temporary	Negligible	Implementation of CTMP							X	Negligible	Negligible
Effects on Driver Delay	Temporary	Negligible	Implementation of CTMP							X	Negligible	Negligible
Effects on Pedestrian Delay	Temporary	Negligible	Implementation of CTMP							X	Negligible	Negligible
Effects on Pedestrian Amenity	Temporary	Minor Adverse	Implementation of CTMP							X	Minor Adverse	Minor Adverse
Effects on Hazardous Loads	Temporary	Negligible	Implementation of CTMP							X	Negligible	Negligible
<b>Operational Phase</b>												
Effects on Accidents and Safety	Permanent	Negligible	Not required							X	Negligible	Negligible
Effects on Severance	Permanent	Negligible	Not required							X	Negligible	Negligible
Effects on Driver Delay	Permanent	Negligible	Not required							X	Negligible	Negligible



Effects on Pedestrian Delay	Permanent	Negligible	Not required							X	Negligible	Negligible
Effects on Pedestrian Amenity	Permanent	Negligible	Not a required							X	Negligible	Negligible
Effects on Hazardous Loads	Permanent	Negligible	Not required							X	Negligible	Negligible

\* Geographical Level of Importance

I = International; UK = United Kingdom; E = England; R = Regional; C = County; B = Borough; L = Local