BEACON FEN ENERGY PARK

Planning Inspectorate Reference: EN010151

Change Request Environmental Statement Addendum
Document Reference: 10.5
December 2025

The Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(q)

Quality information

Prepared by	Checked by	Verified by	Approved by
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1. Introduction

1.1 Background

1.1.1 In April 2025, Beacon Fen Energy Park Ltd (hereafter referred to as 'the Applicant') submitted an application for a Development Consent Order (DCO) under the Planning Act 2008 (hereafter referred to as 'the DCO application') to the Planning Inspectorate ('PINS'), the body appointed to consider, examine and report on such applications on behalf of the Secretary of State. The Secretary of State responsible for determining the DCO application will be the Secretary of State for Energy Security and Net Zero. The DCO application was accepted for Examination on 1 May 2025 and the Examination commenced on 23 September 2025.

1.1.2 The Applicant is seeking development consent for the construction and operation of the Beacon Fen Energy Park, a solar photovoltaic (PV) and battery energy storage facility located approximately 6.5 km northeast of Sleaford and 2.5 km north of Heckington (hereafter referred to as the 'Proposed Development').

1.1.3 On 5 November 2025, the Applicant notified PINS of its intention to submit a request to change the DCO application to incorporate changes relating to the proposed extension works at the Bicker Fen Substation. The Proposed Change to the Bicker Fen Substation extension works entails the inclusion of a new overhead line (OHL) tower of up to 56.2 metres (m) in height, additional cabling and changes to the Work Numbers shown on the **Works Plan (Document Ref: 2.4)** and described in Schedule 1 to the **Draft DCO (Document Ref: 3.1)** (hereafter referred to as the 'Proposed Change'). Further details are provided below in the 'Proposed Change' Chapter, below.

1.1.4 The Proposed Change will not alter the Order Limits as shown in the DCO application. The Proposed Change also does not include a request for additional powers of compulsory acquisition within the DCO Application. As such, the requirements of the Infrastructure Planning (Compulsory Acquisition) Regulations 2010 (the 'CA Regulations') do not apply to this application.

1.2 Purpose of this Document

1.2.1 This Environmental Statement (ES) Addendum has been prepared to consider the Proposed Change and whether this alters the significance of effects as concluded in the April 2025 ES submitted with the DCO application.

2. Proposed Change

2.1 Introduction

2.1.1 The Proposed Change reflects an updated design that has been provided by National Grid Electricity Transmission plc ('NGET') to the Applicant for the proposed extension to Bicker Fen Substation. This has been provided following continued engagement between the parties and is reflective of NGET's latest proposed design, which has evolved as NGET has progressed through its design phase and is typical for works of this nature. It would not have been possible for the Applicant to account for these changes at the time the DCO application was made, which is why the detail of this change request was not included at that stage.

2.2 The Bicker Fen Substation Site

2.2.1 The Proposed Change applies to the extension works at the Bicker Fen Substation, which is operated by NGET. All works fall within the existing Order Limits and are illustrated on Sheet 18 of the **Works Plan (Document Ref: 2.4)**. A comparison of the current Work Numbers and the Proposed Change Work Numbers is illustrated at Appendix 1.5 of the **Change Request Consultation Report (Document Ref: 10.3)**. A description of the Proposed Change is provided in the section, below.

2.3 Description of the Proposed Change

2.3.1 Volume 1 of the ES, **Chapter 2 Proposed Development (APP-053)** describes the proposed extension works to Bicker Fen Substation, including anticipated timescales for the construction and operational phases, which remain unchanged. It is also noted that the works will be undertaken by NGET, rather than the Applicant, and that NGET are named as the "undertaker" for the purposes of the relevant Work Number in the **Draft DCO (Document Ref: 3.1)** for the substation extension (Work No. 5) to enable this.

2.3.2 The Proposed Change comprises the following elements:

- A new OHL tower up to 56.2m in height with four legs, each leg supported on a square excavation of up to 7m by 7m wide, and up to 5m deep. The new OHL tower will be located within the revised area of Work No. 5C;
- A single span of new 400kV overhead cables between the new OHL tower and one of the existing towers. Alternatively, the design of the Proposed Change allows for underground electrical cables should these be installed as an alternative (Work No. 5C);
- Modification of either or both existing towers contained within Work No. 5C, including (but not limited to) new / modified cross-arms, insulators, downleads, cable sealing ends, cable gantries, foundations, arrangements / orientations of overhead lines, communications links, and other electrical infrastructure (Work No. 5C);
- Construction of one new access in the form of a new bell mouth adjoining Vicarage Drove to the south-east or south of the Substation. The new

access would be located within the existing (unchanged) extent of Work No. 10 and would result in a maximum of 20 linear metres of vegetation removal. This is detailed in **Appendix 7.1 Indicative Access Details (Document Ref: 10.9)**;

- Extension of the temporary laydown (Work No. 5D) to an area that is largely existing hardstanding adjacent to the south; and
- Vegetation removal and infilling of the existing drainage pond adjacent the Substation to construct the Substation extension works (Work No. 5E);

2.3.3 A description of the changes to the descriptions of the relevant Work Numbers (as described in Schedule 1 to the **Draft DCO (Document Ref: 3.1)**) and as shown on Sheet 18 of the **Works Plan (Document Ref: 2.4)** is provided in Table 2., below.

Table 2.1 – Description of Change

WORK NO.	DESCRIPTION OF CHANGE
4A	Work No. 4A has been extended to include land along the southeast boundary of the Bicker Fen Substation, increasing its area by approximately 0.9 hectares (ha). This extension provides additional flexibility for the final alignment of the Cable Route as NGET progresses the design of the Proposed Development's generation bay. It is possible that, as part of the Substation extension, Beacon Fen's bay could be relocated within the existing Substation (for example, if a bay becomes available following reconfiguration works).
5C	Work No. 5C has been extended to include land to the southeast of the Bicker Fen Substation, as shown on Sheet 18 of the Works Plan (Document Ref: 2.4) under 'Work Nos. 4A & 5E'. This extension increases the area of Work No. 5C by approximately 2 hectares. The additional land provides greater flexibility for the final positioning of the cable sealing end and the proposed new overhead line (OHL) tower, as NGET progresses the design of the Proposed Development's generation bay. Accordingly, the description of Work No. 5C in the **Draft DCO (Document Ref: 3.1)** has been updated as part of the Change Request. During construction, aggregate or matting will be laid across all landscaped areas within Work No. 5C. Following construction, aggregate and matting will be removed. For Work No. 5C, operational surfacing will be revegetated except for the new OHL tower foundations, which will consist of four impermeable concrete legs, each approximately 7m x 7m. For the purposes of this ES Addendum, it is assumed that the existing surface water attenuation pond in the southwest of the substation will be infilled. All areas of Work No. 5C shown on the updated Works Plan will comprise impermeable and semi-permeable surfacing.
5D	Work No. 5D is extended to the south to include the adjacent land that is largely existing hardstanding located to the north of the of the Bicker Fen Substation. The increase in the size of the area covered by Work No. 5D is 0.6ha. During the construction phase, aggregate or matting will be used across all landscaped the entire areas of within Work No. 5D. Following construction, all aggregate and matting used within Work No. 5D will be removed. For Work No.5D the operational surfacing will retain the existing 0.29ha aggregate compound serving the wider Bicker Fen Substation. All other areas will be revegetated.

5E	The area for Work No. 5E would be unchanged. The infilling of the drainage pond adjacent to the Substation and vegetation removal would take place within the existing area for Work No. 5E shown on Sheet 18 of the **Works Plan (Document Ref: 2.4)**.
10	The area for Work No. 10 is unchanged. The new access would be located within the existing extent of Work No. 10.

2.3.4 The rest of the description of the Proposed Development remains as set out in **Chapter 2 Proposed Development (APP-053)** of the ES. Notably, this includes optionality in relation to the Air Insulated Switchgear (AIS) and Gas Insulated Switchgear (GIS) (see paragraph 2.13.3 of Chapter 2). For the purposes of this ES Addendum, the worst-case scenario in relation to the environmental aspect(s) is considered.

3. Scope and Approach

3.1 Scope of the ES Addendum

3.1.1 This ES Addendum should be read in conjunction with the ES **(APP-052 to APP-070)** that was submitted with the DCO application, as well as the ES elements (i.e. chapters, figures and documents) that have been updated and resubmitted. Together, these are hereafter referred to as 'the Original ES'.

3.1.2 This ES Addendum considers how the Proposed Change affects the assessments and conclusions reached as part of the Original ES. This ES Addendum does not consider changes in legislation or baseline conditions.

3.1.3 If there are no materially different effects (i.e. if no significant change to an assessment is presented as part of this ES Addendum), then the conclusions reached as part of the Original ES assessment remain valid.

3.1.4 Throughout this ES Addendum, references are given to the Examination Library numbers assigned by the Examining Authority (ExA) and identified within brackets, for example (APP-XXX) for information previously accepted for examination, as well as the Applicant's document numbers ('Application Document Ref.' numbers) for documents that have only been submitted recently and therefore have yet to be assigned an Examination Library number by the ExA.

3.1.5 The general assessment methodology and topic-specific methodologies, relevant legislation, policy and guidance, key assumptions and limitations set out in Original ES remain unchanged.

3.2 Consultation

3.2.1 The Applicant has carried out consultation on, and shared information about, the Proposed Change to ensure that key stakeholders, including the local community, are aware of the changes and had the opportunity to make comments and representations on them in advance of the submission of the Change Request. This included those who were potentially impacted by the Proposed Change.

3.2.2 The consultation commenced on 10th November, shortly after the formal notification of the Proposed Change was delivered to PINS on the 5 November and in advance of receiving advice from the ExA. The Applicant has had regard to PINS's advice page *'Nationally Significant Infrastructure Projects: Changes to an application after it has been accepted for examination'* and considered this approach to be appropriate as it allowed sufficient time for consultees to comment on the Proposed Change whilst also allowing sufficient time for the preparation of this Change Request.

3.2.3 The Applicant has already conducted a number of consultations in the local area in accordance with Statement of Community Consultation (SoCC), and was, therefore, well positioned to run a consultation exercise that aligned with the principles of previous consultation exercises, while making clear to recipients that the consultation related to the Proposed Change only and not the ongoing Examination of the Proposed Development as a whole. As such,

it was considered that no prejudice would be caused by consultation taking place before the ExA had given advice (which was provided during the consultation process on 20 November 2025 **(PD-012)**).

3.2.4 In advance of the consultation, the Applicant shared an Engagement Strategy (included in Appendix 1 of the Change Request Consultation Report) detailing the proposed consultation activities and timescales with the authorities where the Proposed Change was located, namely Boston Borough Council (BBC) and Lincolnshire County Council (LCC). The Applicant also shared the engagement strategy with North Kesteven District Council (NKDC) and South Holland District Council (SHDC) as part of their administrative boundaries were within a 2.5km consultation zone from Bicker Fen Substation.

3.2.5 At the beginning of the consultation period, the Applicant notified prescribed persons, including relevant local authorities, statutory undertakers and persons with an interest in land affected by the Proposed Change and certain other non-prescribed persons. The persons consulted were a subset of those notified of the acceptance of the DCO Application pursuant to Section 56 of the Planning Act 2008, subject to any changes to the Section 56 notification list since May 2025 following a review by the Applicant. A letter was sent to these stakeholders including a link to the information on the Proposed Change, this change notification document and plans, and providing details of how to submit comments / feedback and the closing date of the consultation, which was 23:59 on Sunday 7 December 2025.

3.2.6 The Applicant has also consulted the local community by issuing a leaflet to people within a 2.5km consultation zone. The leaflet provided a summary of the Proposed Change and confirmed how people could access further information about the Proposed Change, the channels through which comments / feedback could be submitted and the date by which they had to do this. As part of the consultation, briefings were offered to select elected members.

3.2.7 Additionally, notices regarding the consultation were placed on noticeboards within the 2.5km consultation zone. Here, the Applicant contacted Bicker Parish Council, Donington Parish Council, Helpringham Parish Council, Little Hale Parish Council and Swineshead Parish Council advising them of the notice and requesting that they be placed on noticeboards (within the respective parishes). All parish councils agreed, with the Applicant confirming that the notices had been erected during a site visit undertaken to erect the onsite land notice (at Vicarage Drove) on the 27 November 2025.

3.2.8 Full details of the consultation undertaken is provided within the Change Request **Consultation Report (Document Ref: 10.2)** prepared by Pier.

3.3 Structure of the ES Addendum

3.3.1 Chapters 4 to 11 of this ES Addendum cover the technical aspects that have been scoped in for consideration, being the following:

- Landscape & Visual;
- Ecology;
- Cultural Heritage;
- Access & Traffic;

- Soils & Agricultural Land;
- Socio-economics;
- Water Resources & Flood Risk; and
- Air Quality.

3.3.2 Chapter 12 of this ES Addendum provides a summary of the conclusions reached, including any changes to intra-cumulative and / or inter-cumulative impacts reported within Chapters 4 to 11.

4. Landscape & Visual

4.1 Introduction

4.1.1 This Chapter reports on changes to the assessment of landscape and visual effects reported in **Chapter 6 – Landscape and Visual (APP-057)** resulting from changes to the proposed extension works at the Bicker Fen Substation, as described in Chapter 2: Proposed Change of this ES Addendum.

4.1.2 This Chapter should be read in conjunction with **Chapter 6 – Landscape and Visual (APP-057)** of the Environmental Statement (ES) and its appendices, which describes the assessment of effects on the landscape resource and visual amenity in relation to the Proposed Development prior to this Change Application, including in relation to proposed extension works to Bicker Fen Substation.

4.2 Scope and Approach

Methodology

4.2.1 This LVIA Chapter assesses the effects of the Proposed Change on the landscape resource, which includes landscape elements and character, and the effects on views and visual amenity. The methodology used to inform this LVIA Chapter is the same as that used for **Chapter 6 Landscape and Visual (APP-057)** and set out in **Appendix 6.2 Landscape and Visual Methodology (APP-084)** of the Original ES.

Study Area

4.2.2 The geographical extent of the landscape and visual study area associated with the Proposed Change has been defined following analysis of the updated Zone of Theoretical Visibility (ZTV) shown on **Change Request ES Addendum Figure 4.1 Screened Zone of Theoretical Visibility (Document Ref: 10.11)** and the existing baseline context. The ZTV has been updated to reflect the maximum height (56.2m) of the proposed overhead line (OHL) tower.

4.2.3 The ZTV demonstrates extensive theoretical visibility across the southern part of the previously drawn LVIA 'Study Area'. However, the following factors have also been considered in relation to determining the extent of the landscape and visual study area in relation to the Proposed Change:

- Notable change in the level of effects for landscape and visual receptors beyond the South Forty Foot Drain to the West is unlikely because of the intervening presence of the Bicker Fen Windfarm with turbines up to a height to blade tip of approximately 100m;
- Similarly, the presence of turbines within the Bicker Fen Windfarm in the landscape to the south limits the potential of the Proposed Change to result in landscape and visual change for landscape and visual receptors that are located to the south of the wind farm; and
- In views from the north and east, the Proposed Change will be perceived in relation to, and backdropped by, large scale energy infrastructure that

included the Bicker Fen Windfarm and overhead lines and associated towers.

4.2.4 Considering these factors, it is considered that significant effects are not likely to occur beyond a distance of 1.5km from the Bicker Fen substation. As such, it is considered appropriate that a 1.5km radius study area has been adopted as the basis to consider landscape and visual effects relating to the Proposed Change within this LVIA Chapter.

Cumulative

4.2.5 In terms of potential inter-cumulative effects, the Proposed Change has been considered in combination with the other developments listed within **Appendix 4.2 Cumulative Assessment Short List (APP-082)**.

Documents

4.2.6 This LVIA Chapter is accompanied by relevant updates to the following ES documents:

- **Appendix 6.7 Outline Landscape and Ecological Mitigation Plan (oLEMP) (Document Ref: 6.3.19);**
- **Change Request ES Addendum Figure 4.1 Screened Zone of Theoretical Visibility (Document Ref: 10.11);**
- **Figure 6.31 The Landscape Strategy Plan (Document Ref: 6.4.42a to 6.4.42c);** and
- **Figure 6.32 The Vegetation Removal Plan (Document Ref: 6.4.43a to 6.4.43c).**

4.3 Baseline

4.3.1 The landscape and visual baseline will largely remain as reported in **Chapter 6 Landscape and Visual (APP-057)**. The following sections provides a summary of key aspects of the landscape and visual baseline associated with the 1.5km LVIA Chapter study area.

Landscape baseline

The Site and Immediate Landscape Context

4.3.2 The landscape of the existing Bicker Fen Substation is strongly characterised by the presence of existing energy infrastructure. This includes the existing Bicker Fen Substation itself, the Bicker Fen Windfarm immediately to the south and west and the under construction Vicarage Drove Solar Farm. Overhead power lines and pylons connecting into the existing Bicker Fen Substation also add to the widespread presence of energy infrastructure. In relation to this area, **Chapter 6 Landscape and Visual (APP-057),** at paragraph 6.5.2, describes the landscape baseline as follows; *"Existing energy infrastructure is present in the form of high-voltage power lines and pylons, the Bicker Fen Substation and the adjacent Bicker Fen Windfarm."*

4.3.3 More widely, the Bicker Fen Substation is located within a predominantly and characteristically flat and open landscape occasionally interspersed with plantation woodland. Shelterbelts associated with individual dwellings and

farmsteads, which are widely dispersed across the rural landscape also intermittently punctuate the otherwise open landscape.

4.3.4 The open drainage network comprises a hierarchical grid layout of straight, open, drainage channels crossed by frequent bridges to facilitate access. Drain and dyke banks are regularly maintained in most parts with limited riparian vegetation.

Landscape Character

4.3.5 This section provides a summary of the landscape character areas (LCA) within the 1.5km study area with the potential to be affected by the Proposed Change.

Landscape Character Assessment of Boston Borough

4.3.6 The Site is located within the Holland Reclaimed Fen (LCA) relevant characteristics within the Landscape Character Assessment of Boston Borough include:

- *"Flat and low-lying reclaimed fenland;*
- *Open and expansive views with big skies and dark night skies, with some*
- *views semi-enclosed at ground level by large embankments;*
- *More distant views to Boston Stump and to the Lincolnshire Wolds in East Lindsey District to the north;*
- *A man-made intensive arable landscape laid out in a regular, geometric pattern with narrow roads and trackways alongside drains, dykes and ditches;*
- *The large North Forty Foot Drain and South Forty Foot Drain are key dominating features of the area;*
- *Field boundaries are typically open with wet ditches, dykes and drains and the occasional hedgerow;*
- *Occasional large-scale horticultural glasshouses and packing or processing plants occur near the southern boundary of the area;*
- *Sparsely populated with occasional small hamlets, scattered farmsteads, and occasional rows of former workers' cottages;*
- *Occasional derelict farm cottages and field buildings;*
- *Sparse tree cover confined to shelterbelts, with occasional hedgerows and small blocks of mixed woodland with shrubby edges; • Bicker Fen windfarm and large-scale pylons on the south-western tip are modern landmark features; and*
- *A semi-remote, tranquil and intact working agricultural landscape."*

4.3.7 The Proposed Change is also located in close proximity to the South Holland Fens LCA, approximately 0.5km to the south and the Wash Farmlands LCA, approximately 0.4km to the east.

Visual baseline

4.3.8 The flat, open landscape facilitates long distance views which are occasionally interrupted by the presence of shelterbelt planting and large-scale vertical features including commercial wind turbines and overhead line infrastructure.

4.3.9 Visual receptors potentially affected by the Proposed Change include residential receptors, Public Right of Way (PRoW) users and users of the local transport network within the 1.5km Study Area as set out, below.

Residential Receptors

4.3.1 Residential receptors within the Study Area are identified in **Figure 6.7 Residential Properties (APP-209)**. Those properties considered in the assessment in relation to the Proposed Change were the following receptors, with the distance from the Bicker Fen Substation stated:

- Residential Receptor 11 – Polar Tree Farm, located approximately 650m to the north;
- Residential Receptor 12 – Villa Farm, located approximately 750m to the north;
- Residential Receptor Groups R13, located approximately 1020m to the west, including;
  - 13a – Kingtree lodge.
  - 13b – Cowbridge Farm.
- Residential Receptor Groups R14, located approximately 1350m to the northeast, including;
  - 14a – Butlers.
  - 14b – Acorn Lodge.
  - 14c – Mildrain Lodge.

Recreational Path Network

4.3.2 PRoW within the Study Area are identified in **Figure 6.6 Recreational routes facilities and visitor destinations (APP-208)**. Those PRoW considered in the assessment in relation to the Proposed Change were the following receptors with the distance from the Bicker Fen Substation stated:

- PRoW Bick/1/1 which follows the alignment of the located approximately 1275m to the west;
- PRoW Bick/2/1 located approximately 400m to the east; and
- Doni/20/2 located approximately 750m to the southeast.

Transport Network

4.3.3 This includes users of the local road network in proximity to Bicker Fen Substation, this being Tilebarn Lane, Bicker Drove and Vicarage Drove.

4.4 Assessment of Effects

Embedded Mitigation

4.4.1 As stated in paragraph 2.2.11 of **Appendix 6.7 Outline Landscape and Ecological Management Plan (6.3.19)**, large areas of existing vegetation within the Bicker Fen Substation will be retained and protected. Planting within the Cable Route Corridor (of which Bicker Fen Substation is part) will be limited to the reinstatement of hedgerows removed during the construction phase subject to easement restrictions.

4.4.2 However, following representations Local Impact Reports (LIRs) from the South and East Lincolnshire Councils Partnership – Boston Borough Council **(REP1-059)** and discussions with Boston Borough Council on the 31 October

2025, the Applicant has agreed to introduce further landscape and ecological enhancement measures within the Bicker Fen Substation area. These measures have been developed further in relation to the provision of enhancement for the Proposed Change and are illustrated on an updated version of **Figure 6.31 Landscape Strategy Plan (6.4.42a to 6.4.42c)**.

4.4.3 In summary the landscape enhancement proposals comprise the following measures:

- Areas of woodland to the north of the substation area will be retained and further woodland and scrub will be introduced to fill gaps in this cover to provide stronger visual enclosure of the northwestern boundary of the substation site. A total of 8120m^2 of additional planting is proposed for this northern area;
- A mosaic habitat of scrub and neutral grassland will be created and existing woodland will be managed to enhance biodiversity and ecological value and;
- Smaller areas of woodland will be introduced to the southeast corner of the substation area where constraints allow (the area to the south is more constrained due to it hosting the substation extension itself, existing utilities with easement restrictions, and the Cable Route Corridor). A total of 1627m^2 of additional planting is proposed for this southeastern area.

4.4.4 These measures is secured through an updated 'Bicker Fen Substation' section (paragraphs 2.4.7 to 2.4.11) within **Appendix 6.7 Outline Landscape and Ecological Management Plan (6.3.19)**, secured pursuant to Requirement 7 of Schedule 2 to the **Draft DCO (Document Ref: 3.1)** which has been submitted with this Change Request. NGET will be carrying out the proposed extension works and will therefore be responsible for confirming the detailed design.

Sensitivity Assessment

Landscape Receptor Sensitivity

4.4.5 Landscape sensitivity is set out within **Chapter 6 Landscape and Visual (APP-057)** and **Appendix 6.4 Visual Assessment (APP-086)**. A summary of sensitivity assessment for landscape receptors considered in this LVIA Chapter is in Table 4.1, below. The sensitivity of the Bicker Fen Substation was not specifically assessed in **Chapter 6 (APP-057)** rather it was considered as part of the overall medium sensitivity of the Site. The sensitivity assessment for the South Holland Fen LCA is as reported in **Chapter 6 (APP-057)**.

Table 4.1 – Summary of Landscape Receptor Sensitivity Assessment

RECEPTOR.	SENSITIVITY
Site Area	The Bicker Fen Substation area comprises some individual landscape elements, including mature woodland plantation and scrub which are of value in terms of the role they play in providing partial visual assimilation and biodiversity value. However, overall, the prominence of energy infrastructure is a dominant detracting element resulting in a Low value.

	Generally, the industrial context and presence of large-scale energy infrastructure reduce susceptibility to the Proposed Change resulting in Low susceptibility. Overall, low value combined with low susceptibility results in Low sensitivity for the landscape of the Site.
South Holland Fen LCA	As reported in **Chapter 6 Landscape and Visual (APP-057)**, sensitivity has been assessed as Medium (paragraph 6.6.27).

Visual Receptor Sensitivity

4.4.1 Landscape sensitivity is set out within **Chapter 6 Landscape and Visual (APP-057)** and **Appendix 6.4 Visual Assessment (APP-086)**. A summary of sensitivity assessment for landscape receptors considered in this LVIA Chapter is in Table 4.2, below.

Table 4.2 – Summary of Visual Receptor Sensitivity Assessment

RECEPTOR	SENSITIVITY
Residential Receptor 11 – Polar Tree Farm	High.
Residential Receptor 12 – Villa Farm	High.
Residential Receptor Group R13	High.
Residential Receptor Group R14	High.
PRoW Bick/1/1	High.
PRoW Bick/2/1	High.
Doni/20/2	High.
Local road network in proximity to Bicker Fen Substation	Medium.

Limitations and Assumptions

4.4.2 It should be noted that **Chapter 6 Landscape and Visual (APP-057)** assessed effects on the Site for all aspects of the Proposed Development (i.e. the Solar Array Area, Cable Route Corridor and Bespoke Access Corridor). It did not identify landscape and visual effects that are solely a result of works associated with the Bicker Fen Substation extension.

4.4.3 Vegetation retention and removal within the Cable Route Corridor is shown on **Figure 6.32 Vegetation Removal Plan (6.4.43c)**. Within the Cable Route Corridor there will be a maximum vegetation removal width of up to 30m in each place where the Cable Route crosses vegetation to accommodate the installation of the Cable Route including any associated infrastructure.

4.4.4 For this assessment, a worst case scenario of vegetation removal has been assumed at the Bicker Fen Substation. The approach is described in paragraphs 2.4.7 to 2.4.11 of **Appendix 6.7 Outline Landscape and Ecological Management Plan (6.3.19).**

Construction Phase Development Impacts

Landscape Effects

Bicker Fen Substation

4.4.5 **Chapter 6 Landscape and Visual (APP-057)** reported that construction phase effects would be Major adverse (**Significant**) and short term because of the widespread presence of construction activity across all parts of the

Proposed Development, including the Cable Route Corridor in which the Proposed Change is located.

4.4.6 The construction works associated with the Proposed Change, including further vegetation removal (approximately 1010m^2 of tree/shrub cover and 20 linear metres of roadside vegetation) within the Bicker Fen Substation compound and works at higher elevations associated with the proposed OHL tower, will be perceived in the context of other infrastructure within the Order Limits at the Bicker Substation. This will add incrementally to this wider activity resulting in a medium magnitude of change and a Minor adverse (**Not Significant**) short term effect in relation to the Proposed Change.

Holland Reclaimed Fen LCA

4.4.7 **Chapter 6 Landscape and Visual (APP-057)** reported Moderate adverse (**Significant**) effects for the Holland Reclaimed Fen LCA during construction because of the presence of construction activity in an open landscape within a small extent of the LCA.

4.4.8 Construction works associated with the Proposed Change will include the temporary presence of a crane(s) and work at height to facilitate introduction of the new OHL tower. This will result in a slightly wider characterising presence of construction activity across the LCA although views of this activity will be perceived in relation to existing large-scale energy infrastructure. The magnitude of change would be very low resulting in a Negligible adverse (**Not Significant**) short term effect in relation to the Proposed Change.

Visual Effects

Residential Receptors 11 – Poplar Tree Farm and 12 Villa Farm

4.4.9 Construction works including the presence of cranes associated with the Proposed Change will be partially visible although perceived in relation to the intervening presence of the Bicker Fen Windfarm and existing overhead lines and associated infrastructure. Existing vegetation and outbuildings within the property curtilages will further limit the availability of views. The magnitude of change would be low resulting in a Minor adverse (**Not Significant**) short term effect in relation to the Proposed Change.

Residential Receptor Groups R13 and R14

4.4.10 Construction works, including the removal of vegetation to the east of the Bicker Fen Substation compound and activity associated with cranes as part of the Proposed Change, will be visible. These views will be partially screened and filtered by a woodland plantation and mature hedgerows / hedgerow trees in the intervening landscape. Views of construction activity will also be backdropped by views of the Bicker Fen Windfarm, existing overhead lines and associated infrastructure. Existing vegetation to property boundaries will limit the availability of views to some extent. The magnitude of change would be low resulting in a Minor adverse (**Not Significant**) short term effect in relation to the Proposed Change.

PRoW Bick/1/1

4.4.11 The main visible aspect of the Proposed Change will be the emerging OHL tower and associated works. This activity will be perceived in views of commercial turbines in the intervening landscape as well as the existing

substation and the extension works as part of the Proposed Development. In relation to this context the magnitude of change will be very low resulting in a Minor adverse (**Not Significant**) short term effect in relation to the Proposed Change.

PRoW Bick/2/1 and Doni/20/2

4.4.12 These PRoW link into each other and effectively provide a continuous route along the Hammond Beck and have, therefore, been considered as a single route.

4.4.13 Construction works associated with the Proposed Change will include the removal of sections of vegetation to the eastern boundary of the Bicker Fen Substation compound to facilitate access as detailed in section 4.2.3 and 4.4.4 above. This is likely to temporarily allow partial views of construction activity and views of works at height to the proposed OHL tower will also be available from parts of this PRoW although perceived in relation to views of turbines within the Bicker Fen Windfarm. The magnitude of change will be low resulting in a Minor adverse (**Not Significant**) short term effect.

Local road network in proximity to Bicker Fen Substation

4.4.14 An increase in construction activity including the removal of vegetation adjacent to a section of Vicarage Drove would be visible for a short section of the route (up to a maximum distance of 500m). Otherwise, views of construction activity would be restricted to longer distance transient views of works associated with the Proposed Change (i.e. the OHL tower). The magnitude of change is assessed to be low, resulting in a Minor adverse (**Not Significant**) short term effect.

Conclusion

4.4.15 The Proposed Change will not result in any construction phase significant landscape or visual effects.

Operation Phase Development Impacts

Landscape Effects

Site Area – Bicker Fen Substation

4.4.16 On completion of construction, the loss of vegetation in the south-east corner of the Bicker Fen Substation area and the addition of further energy infrastructure and new substation access will add incrementally to the presence of built development within a site already heavily characterised by similar structures. The magnitude of change as a result of the Proposed Change would remain low at year 15 resulting in a Minor adverse (**Not Significant**) residual effect.

Holland Reclaimed Fen

4.4.17 The introduction of the OHL tower as part of the Proposed Change will result in a slightly wider characterising presence across the LCA although views will be perceived in relation to existing large scale energy infrastructure. The magnitude of change across the LCA as a whole would be very low at year 0 and at year 15 although establishment of mitigation planting will aid assimilation of lower-level infrastructure from a limited part of the LCA.

Residual effects on the Holland Reclaimed Fen LCA will be Negligible adverse (**Not Significant**).

Visual Effects

Residential Receptors 11 – Poplar Tree Farm and Villa Farm

4.4.1 The introduction of the OHL tower as part of the Proposed Change will be visible from some aspects of the properties although views will be perceived in relation to existing large scale energy infrastructure. The magnitude of change is assessed to be low at year 0 and year 15 although establishment of mitigation planting to the northern and western boundaries of the substation will aid assimilation of lower level infrastructure. Residual effects on these residential receptors will be Minor adverse (**Not Significant**).

Residential Receptor Groups R13 and R14

4.4.2 **Chapter 6 Landscape and Visual (APP-057)** reported Minor adverse (**Not Significant**) effects for residential receptors at these properties. The level of effect solely in relation to the previously proposed extension works at the Bicker Fen Substation was assessed to be Minor adverse (**Not Significant**).

4.4.3 Vegetation removal to the eastern boundary may be perceptible from some aspects of these properties but will not be prominent. The introduction of the OHL tower as part of the Proposed Change will be visible although views will be perceived in relation to existing large scale energy infrastructure. The magnitude of change is assessed to be low at year 0 and 15 although establishment of mitigation planting to the eastern boundary of the substation will reduce the presence of infrastructure in views. Residual effects on these residential receptors will be Minor adverse (**Not Significant**).

PRoW Bick/1/1

4.4.4 The main visible aspect of the Proposed Change will be the new OHL tower and associated works. This infrastructure will be perceived in relation to views of commercial turbines in the intervening landscape as well as the existing substation and the extension works as part of the Proposed Development. In relation to this context the magnitude of change is assessed to be low at year 0 and 15 resulting in Minor adverse (**Not Significant**) residual visual effects.

PRoW Bick/2/1 and Doni/20/2

4.4.5 The loss of vegetation, up to a maximum of 20 linear metres, to the eastern boundary of the Bicker Fen Substation compound to facilitate the introduction of the new access will allow partial, transient views of energy infrastructure from sections of this road. The proposed OHL tower will also be visible available from parts of this PRoW although perceived in relation to and backdropped by views of turbines within the Bicker Fen Windfarm and overhead line infrastructure. The magnitude of change is assessed to be medium from a limited part of the route, but the overall magnitude is assessed to be low at year 0 resulting in a Minor adverse (**Not Significant**) effect. At year 15 following establishment of enhancement planting lower-level infrastructure will be partially screened although residual effects would remain Minor adverse (**Not Significant**).

Local road network in proximity to Bicker Fen Substation

4.4.6 Vegetation removal adjacent to Vicarage Drove and the introduction of the new substation access and views of infrastructure will result in close distance views from a very short section of the highway network. Otherwise, the Proposed Change is not anticipated to be widely perceptible from the wider transport network of minor roads. The magnitude of change is assessed to be low at year 0 and very low at year 15 following establishment of mitigation planting to the south-east part of the Site resulting in a Negligible adverse (**Not Significant**) residual effect.

Conclusion

4.4.7 The Proposed Change will not result in any new or different operation phase significant landscape or visual effects, as compared to the Proposed Development without the Proposed Change.

Decommissioning Phase Development Impacts

4.4.8 No impacts associated with decommissioning are anticipated as it is assumed that the infrastructure at the Bicker Fen substation will remain in situ and continue to be operated by National Grid. None of these assumptions change as a result of the Proposed Change.

4.5 Mitigation Measures

4.5.1 Embedded mitigation measures have been identified in paragraphs 4.4.1 to 4.4.4 of this Chapter. No further measures have been identified as being necessary to implement during the course of undertaking the assessment of landscape and visual effects in respect of the Proposed Change.

4.6 Residual Effects

4.6.1 No further mitigation measures have been identified which would modify the landscape and visual assessment in relation to the Proposed Change, therefore, the residual effects remain as set out in section 4.5 of this LVIA Chapter.

4.7 Assessment of Cumulative Effects

4.7.1 The potential for the Proposed Change to introduce landscape and visual effects in association with the schemes identified in **Appendix 4.2 Cumulative Assessment Short List (APP-082)** has been considered in relation to intra and inter cumulative effects.

Intra-cumulative Impacts

4.7.2 **Chapter 6 Landscape and Visual (APP-057)** considered the Proposed Development in relation to the potential for cumulative intra cumulative effects to occur in association with ecology and glint and glare. No significant intra cumulative effects were reported in relation to these disciplines.

4.7.3 The Proposed Change will result in further habitat loss to the southeast corner of the Bicker Fen substation through the removal of approximately 1010m^2 of tree/shrub cover and 20 linear metres of roadside hedge. This factor will also have landscape and visual implications although the landscape enhancement

measures identified in the updated **Figure 6.32 Landscape Strategy Plan (6.4.42c)** and secured through an updated oLEMP (**Appendix 6.7 Outline Landscape and Ecological Mitigation Plan (6.3.19)**) will compensate to some extent for this loss. The relatively small scale of change means that Significant intra-cumulative effects are not predicted.

Inter-cumulative Impacts

4.7.4 **Chapter 6 Landscape and Visual (APP-057)** (paragraphs 6.10.20 to 6.10.25) found that there would be no significant effects on landscape character or visual amenity. It was determined that there would be a Minor adverse (**Not Significant**) cumulative effect for the Holland Reclaimed Fen LCA because of the potential for simultaneous construction activity associated with the introduction of connection works to Bicker Fen Substation associated with the Proposed Development and Heckington Fen Solar Park and also works associated with Vicarage Drove Solar Farm.

4.7.5 Construction activity associated with the Proposed Change is of a smaller scale than the schemes considered in **Chapter 6 Landscape and Visual (APP-057)** and covering a limited geographical area which will not notably add to the cumulative scenario. Therefore, the level of effect will remain Minor adverse (**Not Significant**). At operation the addition of the Proposed Change will result in a very small incremental increase in the presence of energy infrastructure which in relation to the larger scale schemes under consideration will not result in notable change to the cumulative scenario or significant landscape or visual effects.

4.8 Summary

4.8.1 This LVIA Chapter has considered effects on landscape receptors and visual amenity resulting from the Proposed Change within Bicker Fen Substation.

4.8.2 It is considered that the Proposed Change will add incrementally to the existing presence of energy infrastructure within and around the environs of the Bicker Fen Substation. The most notable aspects of the Proposed Change that have the potential to result in landscape and visual effects are the vegetation loss ((approximately 1010m^2 of tree/shrub cover and 20 linear metres of roadside hedge) to the southeast corner and the introduction of the OHL tower. It has been found that these aspects will not introduce any new or different significant landscape or visual effects as compared to the Proposed Development without the Proposed Change, on the basis that landscape and visual change will be perceived in relation to a baseline context strongly influenced by the presence of large scale energy infrastructure and the replacement of hedgerows in the Cable Route Corridor.

Table 4.3 – Landscape and Visual Summary Assessment Matrix

Issue	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Construction Phase												
Landscape												
Site Area – Bicker Fen Substation	Temporary change to the landscape fabric and character of the site resulting from the presence of construction works and associated activity							X	Minor adverse	St, R	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
Holland Reclaimed Fen LCA	Temporary change to the landscape character of the LCA resulting from the presence of construction works within the Bicker Fen Substation Area					X			Negligible adverse	St, R	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
Visual												
Residential Receptors 11 – Poplar Tree Farm and 12 Villa Farm	Views of construction activity within Bicker Fen Substation Area							X	Minor adverse	St, R	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
Residential Receptor Groups R13 and R14	Views of construction activity within Bicker Fen Substation Area.							X	Minor adverse	St, R	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows.
PRoW Bick/1/1	Views of construction activity within Bicker Fen Substation Area.							X	Minor adverse	St, R	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows.
PRoW Bick/2/1 and Doni/20/2	Views of construction activity within Bicker Fen Substation Area.							X	Minor adverse	St, R	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows.

Issue	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Local road network in proximity to Bicker Fen Substation	Views of construction activity within Bicker Fen Substation Area.							X	Minor adverse	St, R	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows.
Operational Phase												
Operation Year 0 Landscape												
Site Area – Bicker Fen Substation	Change to the fabric and landscape character of the site through introduction of energy and associated infrastructure and vegetation loss							X	Minor Adverse	Lt, Ir	Not Significant	Implementation of measures within the OLEMP. Mitigation planting within the Substation area providing screening in association with existing retained vegetation.
Holland Reclaimed Fen LCA	Change to the character of the host LCA through the introduction of energy infrastructure					X			Negligible Adverse	Lt, Ir	Not Significant	Implementation of measures within the OLEMP. Mitigation planting within the Substation area providing screening in association with existing retained vegetation and replacement planting within the Cable Route Corridor.
Operation Year 15 Landscape												
Site Area – Bicker Fen Substation	Change to the landscape character of the site through introduction of energy and associated infrastructure and vegetation loss							X	Minor Adverse	Lt, Ir	Not Significant	Implementation of measures within the OLEMP. Mitigation planting within the Substation area providing screening in association with existing retained vegetation.
Holland Reclaimed Fen LCA	Change to the character of the host LCA through the introduction of energy infrastructure					X			Negligible Adverse	Lt, Ir	Not Significant	Implementation of measures within the OLEMP. Mitigation planting within the Substation area providing screening in association with existing retained vegetation and replacement planting within the Cable Route Corridor.
Operation Year 0 Visual												
Residential Receptors 11 –	Views of energy infrastructure within Bicker Fen Substation Area							X	Minor adverse	St, Ir	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect

Issue	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Poplar Tree Farm and 12 Villa Farm												existing trees, areas of woodland and hedgerows
Residential Receptor Groups R13 and R14	Views of energy infrastructure within Bicker Fen Substation Area							X	Minor adverse	St, Ir	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
PRoW Bick/1/1	Views of energy infrastructure within Bicker Fen Substation Area							X	Minor adverse	St, Ir	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
Local road network in proximity to Bicker Fen Substation	Views of energy infrastructure within Bicker Fen Substation Area							X	Minor adverse	St, Ir	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
Operation Year 15 Visual												
Residential Receptors 11 – Poplar Tree Farm and 12 Villa Farm	Views of energy infrastructure within Bicker Fen Substation Area							X	Minor adverse	St, Ir	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
Residential Receptor Groups R13 and R14	Views of energy infrastructure within Bicker Fen Substation Area							X	Minor adverse	St, Ir	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
PRoW Bick/1/1	Views of energy infrastructure within Bicker Fen Substation Area							X	Minor adverse	St, Ir	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect

Issue	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
												existing trees, areas of woodland and hedgerows
PRoW Bick/2/1 and Doni/20/2	Views of energy infrastructure within Bicker Fen Substation Area							X	Minor adverse	St, Ir	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
Local road network in proximity to Bicker Fen Substation	Views of energy infrastructure within Bicker Fen Substation Area							X	Negligible adverse	St, Ir	Not Significant	Implementation of OCEMP and measures in the OLEMP including measures to protect existing trees, areas of woodland and hedgerows
Decommissioning Phase												
No impacts associated with decommissioning are anticipated												

Key:
Geographical Significance: I = International N = National R = Regional C = County D = District P = Parish L = Low to Local
Nature: St = Short Term Mt = Medium Term Lt = Long Term R = Reversible Ir = Irreversible

5. Ecology

5.1 Introduction

5.1.1 This Chapter reports on changes to the assessment of ecological effects reported in **Chapter 7 Ecology (REP2-015)** resulting from changes to the proposed extension works at the Bicker Fen Substation (the Proposed Change), as described in **Chapter 2 Proposed Change** of this Environmental Statement (ES) Addendum.

5.1.2 This Chapter should be read in conjunction with the ES, **Chapter 7 Ecology (REP2-015)** of the ES, which describes the assessment of effects on ecology in relation to the Proposed Development prior to the Change Request, including in relation to the originally proposed extension works to Bicker Fen Substation.

5.2 Baseline

5.2.1 For the Original ES, the ecological baseline within the Zone of Influence (ZOI) was established through a combination of reviewing existing data sources, consultation with statutory bodies and other relevant organisations, and field surveys. A Preliminary Ecological Appraisal (PEA) has been undertaken of the Proposed Development Site, including the Bicker Fen Substation, with full details provided within **Appendix 7.20 Preliminary Ecological Appraisal Report Cable Route and Access Road (APP-112)**.

5.2.2 This Chapter considers only the ecological impacts arising from the Proposed Change at the Bicker Fen Substation site. The Order Limits are unchanged as compared to the Proposed Development without the Proposed Change , and therefore the ecological baseline remains the same.

5.2.3 The baseline habitats at the Bicker Fen Substation site include other neutral grassland, species-rich hedgerow with trees and developed land with a sealed surface.

The Proposed Change: Ecological Context.

5.2.4 As part of the Proposed Change the area of Work No.4A is extended to allow for cable routing to the west of the substation. To assess the impacts of this change, a worst-case scenario has been assumed, which includes a 30m working width for cable installation and the removal of a species-rich hedgerow with trees and other neutral grassland located in Work No. 4A.

5.2.5 Vegetation retention and removal within the Cable Route Corridor is shown on **Figure 6.32 Vegetation Removal Plan (6.4.43c)**. As part of the Proposed Change, within the area of Work No. 5C a new Overhead Line (OHL) tower is to be installed. This will be supported by four legs each on a square excavation of up to 7m by 7m wide and up to 5m deep. Therefore up to 196m^2 of other neutral grassland in the east of the substation is expected to be permanently lost. This is to allow for the construction of the new transmission tower and associated foundations.

5.2.6 The Work No.5D area is located in the northeast of the substation on developed land and consists of sealed surface and ruderal grassland. The Proposed Change extends the area of Work No .5D to include an area partially consisting of hard standing that is currently used by the substation for parking.

5.2.7 Within the area of Work No. 5E, an existing surface water attenuation pond is assumed to be infilled. This change is formally acknowledged in this Chapter; however, this was also considered in the assessment within **Chapter 7 Ecology (REP2-015)** as part of the worst-case scenario, and therefore, there is no change to this assumption as a result of the Proposed Change as compared to the Proposed Development without the Proposed Change.

5.2.8 To facilitate access, it is assumed that a section of hedgerow may be permanently removed in the area of Work No.10. Depending on the location of this new access, this may be up to 20 m.

Sensitive Receptors

5.2.9 A summary of the sensitive ecological features, their importance in the context of the Proposed Development and justification for scoping them in or out of further assessment is provided in Table 7.7 of **Chapter 7 Ecology (REP2-015)**. There is no change to the identification of sensitive ecological features as a result of the Proposed Change.

Future Baseline Conditions

5.2.10 The assumptions made on the future baseline in **Chapter 7 Ecology (REP2-015)** remain the same for the Proposed Change, that is, in the absence of development, it is assumed that the land will continue to be actively managed as part of the substation. Therefore, it is considered appropriate to rely upon the current baseline conditions and information in this assessment.

5.3 Assessment of Effects

Embedded Mitigation

General

5.3.1 The Proposed Change does not affect the embedded mitigation proposed in Section 7.6 of **Chapter 7 Ecology (REP2-015)** and summarised in **Appendix 2.3 Embedded Mitigation (APP-076)**. At different stages of the Proposed Development, the embedded mitigation is secured via Requirement 5 (detailed design), Requirement 7 (Landscape and Environment Management Plan), Requirement 8 (Biodiversity Net Gain), Requirement 12 (Construction Environmental Management Plan) and Requirement 19 (Decommissioning Environmental Management Plan) of the **Draft DCO (Document Ref: 3.1)**. Embedded mitigation of particular note for the Proposed Change is:

5.3.2 Reinstate land after temporary development, wherever possible;

- Undertaking vegetation clearance outside of the nesting bird season where possible; and undertaking pre-commencement bird surveys where works take place in the nesting bird season;
- Adopting pollution avoidance measures as set out in the Appendix 2.4 Outline CEMP (Revision 3) (REP2-017); and

- Replacing soil subsoil first, followed by topsoil, with any turf replaced last.
-

Construction Phase Development Impacts

The Wash Ramsar and SPA

5.3.3 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on The Wash Ramsar and Special Protection Area (SPA), as described in Section 7.6 of **Chapter 7 Ecology (REP2-015)**.

5.3.4 With the inclusion of the Proposed Change as part of the Proposed Development, it is still assumed that the lapwing population in the Wash and Proposed Development are linked, however, the population in the Bicker Fen Substation site is below the 1 % of the Ramsar and SPA lapwing populations threshold required to demonstrate a significant impact. Therefore, the construction of the Proposed Development (plus the Proposed Change) taking place within the winter will have a temporary and very low adverse impact on The Wash Ramsar and SPA and, owing to the value of The Wash, the resultant effect on its conservation status is **Not Significant**.

5.3.5 With the inclusion of the Proposed Change as part of the Proposed Development, there is considered to be no significant impact on wintering bird species, which are a qualifying feature of the Wash SPA and RAMSAR, there is no requirement to update the **Habitat Regulation Assessment** (**REP2-013**) for this feature.

The Wash and North Norfolk Coast SAC

5.3.6 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on The Wash and North Norfolk Coast Special Area of Conservation (SAC) as described in Section 7.6 of **Chapter 7 Ecology (REP2-015).** As a result, there is no requirement to update the **Habitat Regulation Assessment (REP2-013)** for the Wash and North Norfolk Coast SAC.

All LWS within 2 km

5.3.7 There are two Local Wildlife Sites (LWS) within 2km of the Bicker Fen Substation site, which include ditches or drains and are connected to the Proposed Development, hydrologically. The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of these LWSs and they remain as described in Section 7.6 of **Chapter 7 Ecology (REP2-015).**

Coastal and Floodplain Grazing Marsh and Grassland Habitat

5.3.8 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on coastal and floodplain grazing marsh and grassland habitat as described in Section 7.6 of **Chapter 7 Ecology (REP2-015).**

Standing Water

5.3.9 It is assumed that the existing surface water attenuation pond will be lost from the Bicker Fen Substation site, but alternative drainage schemes (including

balancing ponds) will be provided to manage surface water. The loss of the surface water attenuation pond had been assumed within **Chapter 7 Ecology (REP2-015)**, with a low adverse effect that is **Not Significant** as a result, and therefore the Proposed Change does not alter this conclusion.

Linear Water Features

5.3.10 **Chapter 7 Ecology (REP2-015)** assessed the potential impact upon linear water features as a result of the extension works at the Bicker Fen Substation, which, with the identified embedded mitigation in place, resulted in a negligible impact (**Not Significant**). The Proposed Change will not introduce any new impacts and will not change the previous effect, which remains a negligible impact (**Not Significant**).

Invertebrates

5.3.11 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on invertebrates as described in Section 7.6 of **Chapter 7 Ecology (REP2-015)** and remains a very low adverse impact and **Not Significant**.

Great Crested Newt

5.3.12 Great Crested Newts (GCN) have not been recorded within the vicinity of the Bicker Fen Substation site. Mitigation for GCN is covered within the embedded mitigation in **Chapter 7 Ecology (REP2-015)**. The Proposed Change will not introduce any new impacts and will not change the previous effect identified, which remains a temporary low adverse impact and **Not Significant**.

Reptiles

5.3.13 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on reptiles as described in Section 7.6 of **Chapter 7 Ecology (REP2-015)** and remains a very low adverse impact and **Not Significant**.

Wintering and Breeding Birds

5.3.14 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on wintering and breeding birds as described in Section 7.6 of **Chapter 7 Ecology (REP2-015)** which remain low adverse impacts and **Not Significant**.

Badgers – Confidential

5.3.15 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on badgers as described in Section 7.6 of **Chapter 7 Ecology (REP2-015)**, which remains a very low adverse impact and **Not Significant**.

Bats

5.3.16 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on bats as described in Section 7.6 of **Chapter 7 Ecology (REP2-015)**.

Water Voles and Otters

5.3.17 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on water voles and otters as described in Section 7.6 of **Chapter 7 Ecology (REP2-015)**, which remains a low adverse impact, and following additional mitigation negligible impact and **Not Significant**.

Fish including Eels

5.3.18 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on fish including eels as described in Section 7.6 of **Chapter 7 Ecology (REP2-015)**, which remains a low adverse impact and **Not Significant**.

Mammals (hare and hedgehogs)

5.3.19 The inclusion of the Proposed Change as part of the Proposed Development does not affect the assessment of the construction phase on these receptors as described in Section 7.6 of **Chapter 7 Ecology (REP2-015)**.

Operation Phase Development Impacts

5.3.20 In general, for the ecological features at the Bicker Fen Substation site, most of the impacts will occur during the construction phase and no impacts will result in significant effects during the operational phase. The majority of the impacts will be related to permanent land take within the Order Limits, potential contamination and disturbance, all of which will be due to construction. Following construction this activity will cease and the impacts will not continue. These conclusions remain the same with the inclusion of the Proposed Change as part of the Proposed Development.

5.3.21 Whilst it is anticipated that occasional maintenance visits will be required during the operational phase, these will be short-term and on such a small scale that any impacts will be unlikely to result a significant effect. These conclusions remain the same with the inclusion of the Proposed Change as part of the Proposed Development.

5.4 Mitigation Measures

5.4.1 There are no changes to the mitigation measures as a result of the Proposed Change, they remain the same as those outlined in Section 7.7 of **Chapter 7 Ecology (REP2-015)**. The mitigation measures of particular relevance to the Proposed Change are:

- Pre-construction surveys, are undertaken to support the baseline survey findings and to comply with relevant wildlife legislation, including for otter and water vole, invasive and non-native species;
- Vegetation removal using two phase approach to avoid killing or injuring reptiles;
- Following best practice working methods such as storage of materials and backfilling trenches as outlined within **Appendix 2.4 Outline CEMP (Revision 3) (REP2-017)**; and
- Replacement of habitat lost, where possible in the same location. Where this is not possible sufficient habitat has been enhanced and created in the Proposed Development to compensate for that lost.

Operational Phase Mitigation Measures

5.4.2 As no significant adverse effects are expected from the operational phase of the Proposed Development including the Proposed Change, no further mitigation measures are proposed beyond those already set out above for the construction phase and which will continue to apply where relevant, such as **Appendix 6.7 Outline Landscape and Ecological Management Plan (oLEMP) (Document Ref: 6.3.19)**.

5.5 Residual Effects

Construction Phase Development Impacts

5.5.1 There are no changes to the residual impacts identified in Section 7.9 of **Chapter 7 Ecology (REP2-015)** as a result of the Proposed Change. On the basis that the mitigation measures set out and controlled via the requirements in the **Draft DCO (Document Ref: 3.1)** are undertaken and monitoring and remedial actions take place, no residual significant adverse effects are anticipated.

5.5.2 A summary of residual impacts is provided in Table 7.9 of **Chapter 7 Ecology (REP2-015).** There are no alterations to this table as a result of the Proposed Change.

Operation Phase Development Impacts

5.5.3 No additional impacts are anticipated as a result of the Proposed Change at the operation phase.

Decommissioning Phase Development Impacts

5.5.4 It is anticipated that the works undertaken as part of the extension at the Bicker Fen substation will remain in situ and the substation will remain under National Grid Electricity Transmission's (NGET's) control. As such, there are no decommissioning impacts anticipated.

Monitoring

5.5.5 There is no change proposed to the monitoring of habitats and species set out in Section 7.9 of **Chapter 7 Ecology (REP2-015)** included as part of the Proposed Development, as a result of the Proposed Change.

5.6 Assessment of Cumulative Effects

5.6.1 The inclusion of the Proposed Change as part of the Proposed Development does not alter the assessment of intra-cumulative or inter-cumulative effects presented in Section 7.10 of **Chapter 7 Ecology (REP2-015)**. The assessment remains that, with the embedded mitigation in place, no significant effects on ecological features are identified.

5.7 Summary

5.7.1 The Bicker Fen Substation site is within 2 km of two LWSs; it is also hydrologically connected and therefore functionally linked to The Wash and

North Norfolk Coast SAC, an internationally designated site. The Bicker Fen Substation site lies in a landscape where arable farming dominates with fields delineated by drainage ditches and to a lesser extent hedgerows. Grassland is found at the margins of ditches, and waterbodies and woodland are occasionally found in the site. The Bicker Fen Substation site is of value to birds during the winter and breeding periods, and foraging and commuting bats. It is likely to support a range of invertebrates and records of reptiles, otters and water voles have been found in the vicinity of the Bicker Fen Substation.

5.7.2 With the inclusion of the Proposed Change as part of the Proposed Development, during the construction phase, the impacts will remain as identified in Section 7.6 of **Chapter 7 Ecology (REP2-015).**

5.7.3 During the operational and decommissioning phases, no significant impacts are anticipated on ecological features as a result of the Proposed Change the impacts will remain as identified in Section 7.6 of **Chapter 7 Ecology (REP2-015)**.

5.7.4 There will be no change to the mitigation outlined in Sections 7.6 and 7.7 of **Chapter 7 Ecology (REP2-015)** as a result of the Proposed Change.

5.7.5 Table 5.1 provides a summary matrix of the impact assessment on ecological features as a result of the Proposed Change. Overall, the inclusion of the Proposed Change as part of the Proposed Development will not result in any new ecological features or impacts, nor will there be changes to the findings detailed within Section 7.6 of **Chapter 7 Ecology (REP2-015).**

Table 5.1 – Summary Assessment Matrix

Issue	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Construction Phase												
Land take	Loss of breeding habitat for nesting birds, creation of gaps in hedgerows used by commuting bats, killing and injury of protected species.				**X**				Medium adverse Not significant	St, R,	Not significant	Provide temporary crossings for bats; Pre-construction checks for protected species; Replace soil in order, to speed up habitat re-growth.
Contamination of habitats	Waterborne and airborne contamination of habitats; including damaging the integrity of habitats making up the nearby LWS.				**X**				Very low Adverse Not significant	ST, Ir	Not significant	Embedded buffers and pollution prevention measures outlined within the OCEMP (REP2-017/018)
Disturbance of species and habitats	Disturbance of protected species and fragmentation of their habitats including direct disturbance of birds, badgers or otters using an area, and bat commuting habitat being fragmented by physical gaps in hedgerows, or lighting (which they will avoid).				**X**				Low adverse Not significant	St, R,	Not significant	Night-time working to be minimised to avoid light disturbance; Clear vegetation outside the bird nesting season where practical
Operational Phase												
Impacts will occur during the Construction Phase and no additional impacts are expected during the operational phase.												
Decommissioning Phase												
Not Applicable – no decommissioning activities proposed.												
Key: Geographical Significance: I = International N = National R = Regional C = County D = District P = Parish L = Low to Local Nature: St = Short Term Mt = Medium Term Lt = Long Term R = Reversible Ir = Irreversible												

6. Archaeology & Cultural Heritage

6.1 Introduction

6.1.1 This Chapter reports on changes to the assessment of effects on cultural heritage receptors reported in Chapter 8 Cultural Heritage (APP-059) resulting from changes to the proposed extension works at the Bicker Fen Substation (the Proposed Change), as described in Chapter 2 Proposed Change of this ES Addendum.

6.1.2 This Chapter should be read in conjunction with the ES, **Chapter 8 Cultural Heritage (APP-059)** of the Environmental Statement (ES), which describes the assessment of effects on archaeology and cultural heritage in relation to the Proposed Development prior to the Change Request, including in relation to proposed extension works at the Bicker Fen Substation.

6.1.3 The following three figures have been prepared to inform this assessment:

- **Change Request Environmental Statement Addendum Figure 6.1 Non-designated Heritage Assets (10.12);**
- **Change Request Environmental Statement Addendum Figure 6.2 Designated Heritage Assets and ZTV (Document Ref: 10.13);**
- **and**
- **Change Request Environmental Statement Addendum Figure 6.3 Historic Mapping (Document Ref: 10.14).**

6.1.4 The following appendices have been prepared to inform this assessment:

- **Change Request Environmental Statement Addendum Appendix 6.1 Heritage Assets (Document Ref: 10.6)**
- **Change Request Environmental Statement Addendum Appendix 6.2 Statement of Significance (Document Ref: 10.7)**
- **Change Request Environmental Statement Addendum Appendix 6.3 Heritage Impact Assessment (Document Ref: 10.8)**

6.2 Baseline

6.2.1 There are no changes to the baseline conditions presented in **Chapter 8 Cultural Heritage (APP-059)** and the relevant accompanying appendices 8.1 to 8.12 (**APP-177 to APP-154**) as a result of the inclusion of the Proposed Change as part of the Proposed Development.

6.3 Method of Assessment

Archaeology

6.3.1 The baseline conditions have not changed as set out within **Appendix 8.1: Archaeological Desk-based Assessment (APP-117)**.

Heritage

Appendix 6.1 Heritage Assessment 1Change Request) (Document Ref: 10.6

6.3.2 The Proposed Change includes a change in the heights and massing of the Proposed Development at the Bicker Fen Substation, most notably the introduction of an overhead line (OHL) tower of up to 56.2m in height (Work No. 5C). As such, this change has the potential for new indirect impacts and changes in setting of surrounding heritage assets. A review of any potential impacts caused by the Proposed Change was undertaken to ascertain if the Proposed Change would increase the level of impact or result in any new impacts to heritage assets, provided within a scoping exercise (which included a walkover survey to required assets), reflecting the assessment and methodology of the **Appendix 8.2 Heritage Statement (APP-118)**. The results of this exercise are provided in **Change Request Environmental Statement Addendum Appendix 6.1 Heritage Assessment Document Ref: 10.6)** of this Chapter. This was supported by the creation of a Zone of Theoretical Visibility (ZTV) (**Change Request Environmental Statement Addendum Figure 6.2 Designated Heritage Assets and ZTV (Document Ref: 10.13)**) to the height of the tower and a site walkover settings assessment of potentially sensitive assets.

Zone of Theoretical Visibility

6.3.3 To assess any potential effects of the Proposed Change, a new ZTV has been produced in support of this Chapter and is provided within **Change Request Environmental Statement Addendum Figure 6.2 Designated Heritage Assets and ZTV (Document Ref: 10.13))**. This information was used to identify areas of potential intervisibility between the Proposed Development including the Proposed Change and heritage assets. Based on this analysis, assets were assessed according to their sensitivity to setting change, allowing the scoping and detailed assessment to be structured logically and proportionately to inform **Appendix 6.1 Heritage Assessment (Document Ref: 10.6).**

Site Walkover

6.3.4 To assess the effects of the Proposed Change, additional site walkover surveys were undertaken. An inspection was undertaken in October 2025 in order to assess the Proposed Change at the Bicker Fen Substation within its wider landscape context and identify and assess the setting of heritage assets, detail any evidence of previous disturbance, and examine any known or suspected archaeological features such as earthwork signatures and or structural remains. Observations are discussed below.

6.4 Assessment of Effects

6.4.1 The assessment reassesses archaeological and built heritage receptors as set out in Section 8.7 of **Chapter 8 Cultural Heritage (APP-059)**. The assessment has identified potential new impacts from the Proposed Change. However, it concludes that these changes do not alter the original findings or conclusions of the assessment for the Proposed Development.

Embedded Mitigation

6.4.2 The embedded mitigation measures in respect of archaeology and cultural heritage are detailed within Section 8.7 of **Chapter 8 Cultural Heritage (APP-059).** No new embedded mitigation measures are proposed as a result of the Proposed Change.

Construction Phase Development Impacts

Direct Impacts

Post-medieval flood defence remains within the vicinity of Bicker Fen Station (MLI90071).

6.4.3 This asset comprises a series of post-medieval ditches and gullies that are considered to be of low value. Section 8.7 **Chapter 8 Cultural Heritage (APP-059)** previously assessed an 'up to a high' magnitude of impact as a result of the Proposed Development, which results in a slight adverse effect (**Not Significant**). The Proposed Change incudes a new OHL tower with four legs, each leg will require a square excavation of up to 7m by 7m wide, and up to 5m deep within the area for Work No. 5C, resulting in an 'high' magnitude of impact. As such, there is no change to the previous level of effect upon this asset, which remains as slight adverse (**Not Significant**).

Potential unknown archaeological remains

6.4.4 Consistent with the assessment in section 8.7 of **Chapter 8 Cultural Heritage (APP-059)**, any potential unknown archaeological remains within the Proposed Change area would be considered to be of low value. As previously assessed in Section 8.7 **Chapter 8 Cultural Heritage (APP-059)** there is an 'up to a high' magnitude of impact as a result of the Proposed Development, which results in a slight adverse effect (**Not Significant**). As a worst-case scenario, the Proposed Change would entail the digging of 5m deep footing trenches and the allowance for underground electric cables to be installed in Works No. 5C (as a potential alternative to OHL), resulting in an 'high' magnitude of impact. As such, there is no change to the previous level of effect upon this asset, which remains as slight adverse (**Not Significant**).

Indirect impacts

6.4.5 During construction, there is the potential for temporary impacts to the historic landscape character and the setting of heritage assets. Temporary impacts would arise from noise and visual intrusion as a result of the presence of plant, cranes and vehicles while accessing the Bicker Fen Substation. The Proposed Change will result in additional construction traffic and plant activity of 166 Heavy Goods Vehicles (HGV) for the removal of soils, 366 HGVs for the delivery of foundation materials and 26 HGVs for the import of the transmission tower steel frame, as detailed in **Chapter 7: Access and Traffic** of this addendum. However, these would not be of such a scale that it would change the previously assessed level of impacts on the historic landscape and built heritage assets reported in Section 8.7 of **Chapter 8 Cultural Heritage (APP-059).** As such, there is no change to construction impacts on the historic landscape character and built heritage assets, which remains as a slight adverse effect (**Not Significant**). This is because the assets assessed are at such a distance that the Proposed Change will not have a noticeable effect because it will be located within an area of existing industrial infrastructure.

Conclusion

6.4.6 With regards to construction-related impacts occurring as a result of the Proposed Change, the conclusions of **Chapter 8 Cultural Heritage (APP-059)** remain unchanged.

Operation Phase Development Impacts

Direct Impacts

6.4.7 There are not considered to be any direct impacts to archaeological remains during the operational phase as a result of the Proposed Change, which is consistent with the assessment in **Chapter 8 Cultural Heritage (APP-059)**.

Indirect Impacts

Historic Landscape

6.4.8 With regards to the historic landscape character, the Proposed Change is located within the existing Order Limits and would not alter the land use beyond that already discussed in **Chapter 8 Cultural Heritage (APP-059)**. The Proposed Development is being introduced into an already altered industrial energy infrastructure environment, and this is still the case when the Proposed Change is also taken into account.

6.4.9 Thew Proposed Change would entail the construction of a new OHL tower up to 56.2m in height to be installed in the area for Work No. 5C resulting in an 'low' magnitude of impact. As such, there is no change to the previous level of effect upon this asset, which remains as slight adverse (**Not Significant**).

Poplartree Farm (MLI116633)

6.4.10 This is a non-designated farmstead of local interest and of low value. **Chapter 8 Cultural Heritage (APP-059)** previously assessed that the Proposed Development would result in a low magnitude of impact, resulting in a neutral / slight adverse effect (**Not Significant**). The setting of the asset is agricultural, the property is in disrepair and its immediate setting comprises some screening towards the development as per **Change Request Environmental Statement Addendum Figure 6.2 Designated Heritage Assets and ZTV (Document Ref: 10.13)**. The wider setting of the asset comprises energy infrastructure, including the existing Bicker Fen Substation and Bicker Fen Windfarm. Some views towards the Order Limits may result in intervisibility with the proposed OHL tower, but views are incidental and do not contribute to the value of the asset. The Proposed Change comprises the addition of an OHL tower that would be seen alongside existing infrastructure at the substation and the immediate locale, including the windfarm. As such, the magnitude of impact remains Low and the effect remains as per **Chapter 8 Cultural Heritage (APP-059)** at neutral / slight adverse (**Not Significant**).

Whitehouse farm (MLI116634)

6.4.11 This is a non-designated farmstead of local interest and of low value. **Chapter 8 Cultural Heritage (APP-059)** previously assessed that the Proposed Development would result in a low magnitude of impact, resulting in a neutral / slight adverse effect (**Not Significant**). The asset is a partially extant 19th century farmstead, well enclosed by high treeline boundaries providing some screening towards the development as per **Change Request Environmental**

Statement Addendum Figure 6.2 Designated Heritage Assets and ZTV (Document Ref: 10.13). The setting of the asset comprises its farmyards and agricultural surrounds. The wider setting of the asset comprises energy infrastructure including the existing Bicker Fen substation and the windfarm. Views towards the Order Limits may result in intervisibility with the proposed OHL tower, but views are incidental and do not contribute to the value of the asset. The Proposed Change comprises the addition of an OHL tower that would be seen alongside existing infrastructure at the Bicker Fen Substation and the immediate locale, including the Bicker Fen Windfarm. As such, the magnitude of impact remains Low and the effect remains as per **Chapter 8 Cultural Heritage (APP-059)** at neutral / slight adverse (**Not Significant**).

Villa farm (MLI116632)

6.4.12 This is a non-designated farmstead of local interest and of low value. **Chapter 8 Cultural Heritage (APP-059)** previously assessed that the Proposed Development would result in a low magnitude of impact, resulting in a neutral / slight adverse effect (**Not Significant**). The setting of the asset is agricultural, the property is out of use and in disrepair, and its immediate setting comprises some screening towards the development as per **Change Request Environmental Statement Addendum Figure 6.2 Designated Heritage Assets and ZTV (Document Ref: 10.13)**. The wider setting of the asset comprises energy infrastructure, including the existing Bicker Fen Substation and the Bicker Windfarm. Some views towards the Order Limits may result in intervisibility with the proposed OHL tower, but views are incidental and do not contribute to the value of the asset.

6.4.13 The Proposed Change comprises the addition of an OHL tower that would be seen alongside existing infrastructure at the Bicker Fen Substation and the immediate locale, including the Bicker Windfarm. As such, the magnitude of impact remains Low and the effect remains as per **Chapter 8 Cultural Heritage (APP-059)** at neutral / slight adverse (**Not Significant**).

6.4.14 **Change Request Environmental Statement Addendum Appendix 6.1 Heritage Assets (Document Ref: 10.6)** of this ES Addendum, which reassesses potentially sensitive heritage assets having regard to the Proposed Change, concludes that there are no new impacts to any heritage assets as compared to the assessment of the Proposed Development without the Proposed Change.

6.4.15 Four non-designated heritage assets within 1km of the Proposed Change were scoped in during the reassessment of potential effects on setting changes by the Proposed Change at Bicker Fen substation. Individual statements of significance are outlined in **Change Request Environmental Statement Addendum Appendix 6.1 Heritage Assets (Document Ref: 10.6)**. The operational effects and impact of the Proposed Change in relation to these assets is outlined below:

Crow Hall (MLI116635)

6.4.16 A non-designated farmstead of local interest and of low value. Its setting is agricultural, with some limited intervisibility toward the substation, where the proposed OHL tower would be read alongside existing infrastructure. Therefore overall, there is considered to be a low magnitude of impact, thus resulting in a neutral/slight adverse effect (**Not Significant**).

Dovecote Farm (Gaunlet Farm) (MLI116636)

6.4.17 A non-designated farmstead of local interest and of low value. Its setting is agricultural, with some limited intervisibility toward the substation, where the proposed OHL tower would be read alongside existing infrastructure. Therefore overall, there is considered to be a low magnitude of impact, thus resulting in a neutral/slight adverse effect (**Not Significant**).

Unnamed farmstead (MLI116648)

6.4.18 A non-designated farmstead of local interest and of low value. Its setting is agricultural, with some limited intervisibility toward the substation, where the proposed OHL tower would be read alongside existing infrastructure. Therefore overall, there is considered to be a low magnitude of impact, thus resulting in a neutral/slight adverse effect (**Not Significant**).

Ing Farm (MLI116649)

6.4.19 A non-designated farmstead of local interest and of low value. Its setting is agricultural, with some limited intervisibility toward the substation, where the proposed OHL tower would be read alongside existing infrastructure. Therefore overall, there is considered to be a low magnitude of impact, thus resulting in a neutral/slight adverse effect (**Not Significant**).

Assessment of Non-designated Heritage Assets.

6.4.20 The following non-designated assets – ML116635 Crow Hall, Bicker; ML116636 Dovecote Farm, Bicker; ML116648 Un-named Farmstead, Donington and ML114449 Ing Farm (Rose Cottage), Bicker – were assessed as having a low value and low magnitude of impact. Consequently, the effect is considered neutral/slight adverse and **Not Significant**. Overall, no new or additional effects were identified to any heritage assets as a result of the Proposed Change.

Conclusion

6.4.21 With regards to construction-related impacts, which would include a new OHL tower with four legs, each leg will require a square excavation of up to 7m by 7m wide, and up to 5m deep occurring as a result of the Proposed Change, the conclusions of **Chapter 8 Cultural Heritage (APP-059)** remain unchanged.

Decommissioning Phase Development Impacts

6.4.22 No decommissioning impacts are anticipated for the Bicker Fen Substation as it is assumed that that built infrastructure will remain in situ and under the control of National Grid Electricity Transmission (NGET) (see **Chapter 2: Proposed Development (APP-053)**). This includes the Proposed Change and therefore there is no change to the assessment presented in **Chapter 8 Cultural Heritage (APP-059)**.

6.5 Mitigation Measures

Archaeology

6.5.1 **Appendix 8.11 Archaeological Mitigation Strategy (Revision 2) (REP2-019)**, which is secured pursuant to Requirement 11 of Schedule 2 to the **Draft DCO (Document Ref: 3.1),** has been developed for the Proposed Development and establishes the framework for any further archaeological investigations to be conducted before construction commences.

6.5.2 The Bicker Fen Substation has already been evaluated as part of previous works associated with the substation and the Bicker Fen Windfarm (see 5.3 Previous Fieldwork in **Appendix 8.1 Archaeological Desk-based Assessment (APP-117)** and it is not anticipated that the area where the Proposed Change is located would be subject to any requirements for further archaeological evaluation surveys or additional mitigation.

6.5.3 Archaeological mitigation for this area has been agreed with LCC through the provisions set out within **Appendix 8.11 Archaeological Mitigation Strategy (Revision 2) (REP2-019)**.

Built Heritage

6.5.4 No significant effects have been identified as a result of the Proposed Change on the historic landscape character or built heritage assets and no additional mitigation is required.

6.6 Residual Effects

6.6.1 There are no new residual effects as assessed in section 6.4 of this Chapter and there are no new residual effects as reported in **Chapter 8 Cultural Heritage (APP-059)**.

6.6.2 No significant effects have been identified as a result of the Proposed Change, therefore there are no residual effects anticipated. Residual effects will not change and remain as discussed and assessed within the **Cultural Heritage Chapter 8 (APP-059)**, meaning the effects will remain **Not Significant**.

6.7 Assessment of Cumulative Effects

Intra-cumulative Impacts

6.7.1 There are no new or different intra-cumulative impacts when taking into account Proposed Change, as compared to the Proposed Development without the Proposed Change.

Inter-cumulative Impacts

6.7.2 Regarding inter-cumulative effects on archaeology, **Appendix 8.11 Archaeological Mitigation Strategy (Revision 2) (REP2-019)** has identified areas of archaeological potential that could experience direct impact. These are considered to be of low significance and will be mitigated by record prior to construction. The cumulative impact of the Proposed Change considering other developments (see **Appendix 4.2 Cumulative Assessment Short List (APP-082)**) has been assessed and is **Not Significant** due to the low level of impact and significance of the archaeological anomalies previously identified (within the AMS (APP-153)) within the Proposed Change.

6.7.3 Regarding inter-cumulative effects on above ground heritage assets resulting from introduction of the Proposed Change in consideration of the other developments (see **Appendix 4.2 Cumulative Assessment Short List (APP-082)**), this has been assessed and is considered to be **Not Significant** due to the low level of intervisibility arising from the Proposed Change. There are no new or different inter-cumulative impacts on above ground heritage assets when taking into account Proposed Change, as compared to the Proposed Development without the Proposed Change.

6.8 Summary

6.8.1 The impact of the Proposed Change on archaeological assets was considered in detail by examining the area of the Proposed Change against **Appendix 8.11 Archaeological Mitigation Strategy (Revision 2) (REP2-019 to REP2-020)**. This was assessed as no change and the residual effect is considered to be **Not Significant** when taking into account Proposed Change, as compared to the Proposed Development without the Proposed Change.

6.8.2 The impact of the Proposed Change on above ground heritage assets, including the impact on the historic landscape, was considered in detail using the data from **Chapter 8 Cultural Heritage (APP-059)**, **Change Request Environmental Statement Addendum Figure 6.1 Designated Heritage Assets and ZTV (Document Ref: 10.12)**. Additional scoping and site walkover was undertaken to considering the effect on the historic landscape and the setting of identified heritage assets and therefore as a result no change was assessed. The indirect effects on the historic landscape and the setting of identified heritage assets are considered to remain **Not Significant** when taking into account the Proposed Change, which is considered the same as the Proposed Development.

Table 6.1 – Summary Assessment Matrix

Issue	Description of Impact of the Proposed Change	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Construction Phase												
Post-medieval flood defence remains within the vicinity of Bicker Fen Station (MLI90071).	The Proposed Change comprises areas of ground disturbance associated with the four OHL tower legs approximately 7m x 7m wide and 5m deep footings and associated cabling.							X	Slight Adverse (Not Significant)	Ir	Not Significant	None (Appendix 8.11 Archaeological Mitigation Strategy (Revision 2) (REP2-019 to REP2-020)
Potential unknown archaeological remains	Works No. 5C comprises areas of ground disturbance associated with the four OHL tower legs approximately 7m x 7m wide and 5m deep footings and associated cabling.							X	Slight Adverse (Not Significant)	Ir	Not Significant	None
Historic Landscape	Temporary indirect setting impacts through increased in noise and traffic							X	Slight Adverse (Not Significant)	St	Not Significant	None
Operational Phase												
Historic Landscape	Potential changes in the setting of the heritage asset through the introduction of a new OHL tower up to 56.2m							X	Slight Adverse (Not Significant)	Lt	Not Significant	None
MLI 116632 Villa Farm	Potential changes in the setting of the heritage asset through the introduction of a new OHL tower up to 56.2m							X	Neutral/ Slight Adverse	Lt	Not Significant	None
MLI116633 Poplartree Farm	Potential changes in the setting of the heritage asset through the introduction of a new OHL tower up to 56.2m							X	Neutral/ Slight Adverse	Lt	Not Significant	None
MLI116634 White House Farm	Potential changes in the setting of the heritage asset through the introduction of a new OHL tower up to 56.2m							X	Neutral/ Slight Adverse	Lt	Not Significant	None
MLI116635 Crow Hall, Bicker	Potential changes in the setting of the heritage asset through the introduction of a new OHL tower up to 56.2m							X	Neutral/ Slight Adverse	Lt	Not Significant	None

Issue	Description of Impact of the Proposed Change	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
MLI116636 Dovecote Farm (Gauntlet Farm), Bicker	Potential changes in the setting of the heritage asset through the introduction of a new OHL tower up to 56.2m							X	Neutral/ Slight Adverse	Lt	Not Significant	None
MLI116648 Unnamed farmstead, Donington	Potential changes in the setting of the heritage asset through the introduction of a new OHL tower up to 56.2m							X	Neutral/ Slight Adverse	Lt	Not Significant	None
MLI116649 Ing Farm (Rose Cottage), Bicker	Potential changes in the setting of the heritage asset through the introduction of a new OHL tower up to 56.2m							X	Neutral/ Slight Adverse	Lt	Not Significant	None

Key:
Geographical Significance: I = International N = National R = Regional C = County D = District P = Parish L = Low to Local
Nature: St = Short Term Mt = Medium Term Lt = Long Term R = Reversible Ir = Irreversible

7. Access & Traffic

7.1 Introduction

7.1.1 This Chapter reports on changes to the assessment of access and traffic effects reported in **Chapter 9 Access and Traffic (APP-060)** resulting from changes to the proposed extension works at the Bicker Fen Substation (the Proposed Change), as described in **Chapter 2 Proposed Change** of this ES Addendum.

7.1.2 This Chapter should be read in conjunction with **Chapter 9 Access and Traffic (APP-060)** of the Environmental Statement (ES), which describes the assessment of effects of access and traffic in relation to the Proposed Development prior to this Change Request, including in relation to proposed extension works to Bicker Fen Substation.

7.2 Baseline

7.2.1 As noted in paragraph 9.4.2 of **Chapter 9 Access and Traffic (APP-060)**, the construction traffic route comprises the A17, Triton Knoll Access Road, Bicker Drove and Vicarage Drove. The Triton Knoll access road is private road, with no baseline traffic flows expected. It is identified that baseline traffic on Bicker Drove and Vicarage Drove is negligible.

7.2.2 Traffic generated by the Bicker Fen substation works already assessed is estimated to be 15 vehicles Annual Average Daily Traffic (AADT), which even in the context of negligible background traffic, is not significant.

7.3 Assessment of Effects

Embedded Mitigation

7.3.1 As set out in paragraph 9.6.1 of **Chapter 9 Access and Traffic (APP-060)**, all construction traffic will be the subject of a detailed Construction Traffic Management Plan (CTMP) and Delivery Management Plan (DMP), which will, together, set out suitable measures to safely manage and monitor construction traffic, ensuring that highway safety and the free flow of traffic on public highway is maintained. The CTMP and DMP will be applicable to the substation works already assessed and to those resulting from the Change Request.

7.3.2 **Appendix 9.3 Outline CTMP (Revision 1) (REP4-013)** sets out the general details of the CTMP. Detailed CTMP(s) will be prepared and submitted for approval by Lincolnshire County Council (LCC), Boston Borough Council (BBC) and North Kesteven District Council (NKDC) before the commencement of the Proposed Development, and the CTMP(s) must be substantially in accordance with the Outline CTMP. This is secured by Requirement 13 of Schedule 2 to the **Draft Development Consent Order (Document Ref: 3.1).**

Construction Phase Development Impacts

7.3.3 During the construction phase, the changes in traffic impact as compared to the previously assessed construction traffic impacts as a result of the Proposed Change will be relatively low, both in percentage and absolute terms.

7.3.4 The activities that will generate construction traffic, in addition to those already considered in the ES comprise the following:

7.3.5 Excavation and removal of soils from transmission tower foundations (c1,000 m^3). This is based on an assumption of the tower having four 7m x 7m concrete foundations with a 5m depth with the:

- Import of foundation material (c1,000m^3 concrete);
- Import of transmission tower steel frame; and
- Import of other associated cabling and electrical equipment, including for work on existing transmission towers.

- Formation of one new access point and other hardstanding (for example, compounds) associated with the additional works, and additional construction staff trips.

7.3.6 The estimated traffic increase over the entire construction period, of each of these activities is as follows:

- Removal of soils: 166 Heavy Goods Vehicles (HGV) (2-way), assuming average 12m^3 loads. This traffic generation estimate assumes a worst case that all excavated material to allow construction of the tower foundations is removed from Bicker Fen Substation site.
    - Delivery of foundation material: 366 HGVs (2-way), assuming average 6m^3 capacity concrete mixers with 10% wastage. This is worst case, as it assumes all foundation concrete is imported as ready-mix. Onsite batching could increase the amount of foundation material (cement aggregates and additives) that can be imported with each load as materials can imported as bulked dry loads and mixed onsite using a piped water supply;
    - Import of transmission tower steel frame: 26 HGVs (2-way), assuming 130 tonnes of steel in 10 tonne loads;
- Import of other associated cabling and electrical equipment: this is assumed to be a 10% increase compared with the existing estimated substation upgrade traffic, totalling 498 HGVs (2-way);
    - Formation of one new access point and other hardstanding: this is assumed to be a 10% increase compared with the existing estimated substation upgrade traffic, totalling 498 HGVs (2-way); and
- Additional staff trips: there is assumed to be 1 additional return minibus journey per day (up to 14 staff), resulting in 728 additional minibus trips.

7.3.7 The above provides a total estimated traffic increase of 1,554 HGVs and 728 light vehicles. It is assumed, based on information provided by NGET in relation to the substation extension works already assessed, and consideration of other substation upgrade activities, that these increases will be spread over a 14-month period.

7.3.8 As detailed in paragraph 7.3.6, the Proposed Change also requires an additional construction access to be created along Vicarage Drove. The construction works associated with the Proposed Change will include the removal of sections of vegetation to the eastern boundary of the Bicker Fen Substation compound to facilitate access, the access geometry is shown in **Appendix 7.1 Indicative Access Details** of this ES Addendum.

Conclusion

7.3.9 The increase in construction traffic associated with the Proposed Change, compared with that already assessed, is 3.7 HGVs AADT and 1.7 light vehicles AADT. This increase is not material. Therefore, the previously assessed effect remains negligible and is **Not Significant**.

Operation Phase Development Impacts

7.3.10 As set out in paragraph 9.6.11 of **Chapter 9 Access and Traffic (APP-060)**, operational traffic impacts are scoped out of the assessment, except in relation to equipment replacement on the main Solar Array Area. The Proposed Change will not result in any material change to operational traffic generation and no further assessment is required.

Conclusion

7.3.11 There is no change to the conclusions set out in paragraph 9.10.4 of **Chapter 9 Access and Traffic (APP-060)** in relation to operational phase traffic impacts and the effect remains negligible and **Not Significant.**

Decommissioning Phase Development Impacts

7.3.12 No decommissioning works are proposed for the Bicker Fen Substation at the end of the Proposed Development's lifetime as it is assumed that that the substation will remain in situ and under the control of National Grid Energy Transmission (NGET), see **Chapter 2 – Proposed Development (APP-053)**.

Conclusion

7.3.13 No new or different impacts are anticipated as a result of the Proposed Change, as compared to the Proposed Development without the Proposed Change.

7.4 Mitigation Measures

7.4.1 As set out in Section 9.7 of **Chapter 9 Access and Traffic (APP-060)**, no mitigation measures (in addition to the embedded mitigation set out in paragraphs 7.3.1 and 7.3.2 above) are required. This is because the access and traffic effects are assessed as being negligible and **Not Significant**, and this remains the case following the inclusion of the Proposed Change as part of the Proposed Development.

7.5 Residual Effects

7.5.1 There is no change from that reported in Section 7.3, above, or from the conclusion set out in Section 9.8 of **Chapter 9 Access and Traffic (APP-060)**. The residual effects remain negligible and **Not Significant**.

7.6 Assessment of Cumulative Effects

Intra-cumulative Impacts

7.6.1 As set out in Section 9.9 of **Chapter 9 Access and Traffic (APP-060)**, potential intra-cumulative effects are generally considered to be likely in respect of road traffic effects on noise and air quality.

7.6.2 **Chapter 10 Noise and Vibration (APP-061)** does not identify any significant effects from road traffic in relation to noise. Noise and Vibration has been scoped out of any further assessment in relation to the Proposed Change. Therefore, no additional or different intra-cumulative effects are identified.

7.6.3 **Chapter 16 Air Quality (APP-067)** does not identify any significant effects from road traffic in relation to air quality. Potential additional effects of the change on air quality are assessed in Chapter 11: Air Quality of this ES Addendum. That assessment does not identify any material change in respect of effects from road traffic in relation to air quality, therefore no additional or different intra-cumulative effects are anticipated.

Inter-cumulative Impacts

7.6.4 As set out in Section 9.9 of **Chapter 9 Access and Traffic (APP-060)** no significant inter-cumulative effects are identified. This is because the majority of developments listed in **Appendix 4.2 Cumulative Assessment Short List (APP-082)** either have traffic impacts that do not impact the study area for the Proposed Development (including the extension of the Bicker Fen Substation) or they are unlikely to generate traffic during the construction phase of the Proposed Development (including that associated with the extension of the Bicker Fen Substation). Those that do overlap have been assessed cumulatively and there are negligible effects within the study area during resulting from cumulative traffic impact. With the inclusion of the Proposed Change, the impact of the Proposed Development on traffic and access remains negligible and **Not Significant**, so there is no change to the conclusion that no significant inter-cumulative effects are identified.

7.7 Summary

7.7.1 The construction traffic route to/from the substation comprises the A17, Triton Knoll Access Road, Bicker Drove, and Vicarage Drove. Triton Knoll access road is private road, with no baseline traffic flows expected. It is identified that baseline traffic on Bicker Drove and Vicarage Drove is negligible.

7.7.2 All construction traffic will be the subject of a detailed CTMP(s) and DMP(s) that will, together, set out suitable measures to safely manage and monitor construction traffic, thereby ensuring that highway safety and the free flow of traffic on public highway is maintained. This is embedded migration and secured by the **Draft DCO (Document Ref: 3.1)**.

7.7.3 During the construction phase, the changes in traffic impacts as compared to the previously assessed construction traffic impacts as a result of the Proposed Change will be relatively low, both in percentage and absolute terms.

7.7.4 The increase in construction traffic associated with the Proposed Change, compared with that already assessed is 3.7 HGVs AADT and 1.7 light vehicles AADT. This increase is not material. Therefore, the previously assessed effect remains negligible and is **Not Significant.**

7.7.5 No additional mitigation measures (in addition to the embedded mitigation) are required. Therefore, the residual effect remains negligible and **Not Significant**.

Table 7.1 – Summary Assessment Matrix

Issue	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Transport And Access												
No significant effects identified												

8. Soils & Agricultural Land

8.1 Introduction

8.1.1 This Chapter reports on changes to the assessment of soils and agricultural land effects reported in **Chapter 14 Soils and Agricultural Land (APP-065)** resulting from changes to the proposed extension works at the Bicker Fen Substation (the Proposed Change), as described in **Chapter 2: Proposed Change** of this ES Addendum.

8.1.2 This Chapter should, therefore, be read in conjunction with the **Chapter 14 Soils and Agricultural Land (APP-065)** of the Environmental Statement (ES) and its appendices, which describes the assessment of effects on soils and agricultural land in relation to the Proposed Development prior to the Change Request, including in relation to the extensions works at Bicker Fen substation.

8.1.3 A new OHL tower is to be installed within the revised area of Work No. 5C. The tower will be supported by four legs; each leg will require a square excavation of up to 7m by 7m wide and up to 5m deep. In addition, a new access up to 20 linear metres in length, both of which increases the amount of land permanently lost and will have an impact on soils and agricultural land. Full details of the Proposed Change are included in **Chapter 2: Proposed Change** of this ES Addendum.

8.1.4 One of the assumptions for the Proposed Change is that during construction there will be aggregate or matting over the entire area for works numbers 5A, 5B, 5C, and 5D, as such, the areas associated with these work numbers are included within calculations for temporary land loss and temporary soil disturbance.

8.1.5 Changes to the assessment of effects on soils and agricultural land in relation to the Proposed Change only relate to the Cable Route Corridor (the assessment of which is provided in Section 14.8 of **Chapter 14 Soils and Agricultural Land (APP-065)**. It should be noted that the Bicker Fen substation (including the proposed extension works) is considered as part of the Cable Route Corridor, which remains unchanged. The Proposed Change will, however, impact upon more land within the Cable Route Corridor within the substation area, and it is this difference that is assessed within this ES Addendum chapter.

8.2 Baseline

8.2.1 The baseline for this Chapter has not changed as compared to the baseline in **Chapter 14 Soils and Agricultural Land (APP-065)** as there has been no change to the Order Limits. The baseline for soils and agricultural land is described in detail in **Chapter 14 Soils and Agricultural Land (APP-065)**.

8.2.2 For ease of reference, this section provides a summary of the baseline soils and agricultural land within the areas of the Cable Route Corridor (Work No. 4A) affected by the substation upgrade works, which also includes the

extension works. This includes the areas for the generation bay and associated works (Work No. 5A and 5B), cable sealing end and new OHL tower (Work No. 5C), construction compounds (Work No. 5D), further works including landscaping and drainage (Work No. 5E) and access (Work No. 10).

Agricultural Land

8.2.3 Publicly available data on the agricultural quality of the land within the areas affected by the Proposed Change is available in the form of Provisional Agricultural Land Classification (ALC) data[1]. The area affected by the Proposed Change is entirely mapped as being Provisional Grade 2 quality land, and Natural England Best and Most Versatile (BMV) Agricultural Land likelihood mapping[2] indicates that the land has a high likelihood of BMV presence (>60% area BMV).

8.2.4 There is no climatic limitation to the ALC grading. The area of the substation has 109 Field Capacity Days (FCDs).

Soil Resources

8.2.5 Published information on the soil resources present within the Cable Route Corridor and substation are available in the form of the Soil Survey of England and Wales (SSEW) 1984 survey data[3]. These data are supported by detailed ALC surveys carried out on the Solar Array Area (**Appendix 14.2 ALC Report 2023 (APP-174)**) and Bespoke Access Corridor (**Appendix 14.3 ALC Report Beacon Fen Construction Access Track 2024 (APP-175)**).

8.2.6 Whilst the soils within the area of the substation extension have not been subject to a detailed survey, the soil association mapped within this area was also found in the Solar Array Area. The detailed survey data for the Solar Array Area can, therefore, also be used to inform on the likely characteristics of the soils within the area of the substation extension.

8.2.7 The substation and southern extent of the Cable Route Corridor occur within an area of the Wallasea 2 (813g) association. Wallasea 2 (813g) soils are characterised by clayey and slowly permeable soils affected by groundwater. A detailed description of this soil association is provided within Section 14.5 (including Table 14.12: The Soil Associations found with the Solar Array Area, Cable Route Corridor and Bespoke Access Corridor) of **Chapter 14 Soils and Agricultural Land (APP-065)**.

8.3 Assessment of Effects

Embedded Mitigation

8.3.1 As a result of the Proposed Change, no requirement to change to the embedded mitigation included within the **Chapter 14 Soils and Agricultural Land (APP-065)** has been identified, which is secured through **Appendix 14.4 Outline Soil Management Plan (OSMP) (APP-176)** included as part of the

[1] Natural England (2025) Provisional Agricultural Land Classification (ALC). Available at: https://www.data.gov.uk/dataset/952421ec-da63-4569-817d-4d6399df40a1/provisional-agricultural-land-classification-alc2. [Accessed November 2025].
[2] Natural England (2017) Likelihood of Best and Most Versatile Agricultural Land. Available at: https://publications.naturalengland.org.uk/category/5208993007403008. [Accessed November 2025].
[3] Soil Survey of England and Wales (1984) Soils and Their Use in Eastern England, With Accompanying 1:250000 Map (Sheet 4).

DCO application. The OSMP is secured through Requirement 16 of Schedule 2 of the **Draft DCO (Document 3.1)**.

8.3.2 There is also no change to the embedded mitigation included within **Appendix 2.4 Outline Construction Environmental Management Plan (OCEMP) (APP-077)** which has been identified. The OCEMP refers to the soil management measures included in **Appendix 14.4 Outline Soil Management Plan 2024 (APP-176)**. Pre-entry assessments of agricultural land drainage systems will be required and considered as part of the detailed CEMP(s), production, approval and implementation of which is secured pursuant to Requirement 12 in Schedule 2 to the **Draft DCO (Document Ref: 3.1)**. The detailed CEMP(s) will include mitigation measures to avoid damage to mapped underdrainage. Where this is not practicable, field drains will be diverted or replaced or such other solution required to alleviate flooding in consultation with the landowner. As part of **Chapter 11 Water Resources and Flood Risk (APP-062)**, **Appendix 11.1 Flood Risk Assessment (APP-162)** has been produced and sets out a drainage strategy for the Site and will incorporate Sustainable Drainage Systems (SuDS), where feasible.

Construction Phase Development Impacts

Agricultural Land

8.3.3 The criteria for determining receptor sensitivity remains the same as set out in **Chapter 14 Soils and Agricultural Land (APP-065)**. The sensitivity of the agricultural land using the Provisional ALC data would be 'Very High' (the highest sensitivity category) as the land affected by the substation extension works is entirely mapped as being of Provisional Grade 2 quality. However, further review of the land use within the area has shown the land to be of a lower sensitivity.

8.3.4 Whilst the 3 ha area is provisionally mapped as Grade 2 quality land, it can be seen from satellite imagery that it includes existing infrastructure associated with the substation including two existing OHL towers, a building and areas of hardstanding. This area is under the control of National Grid Electricity Transmission (NGET) and is not managed for arable agriculture in the same manner as the surrounding land. Instead, it consists of small areas of woodland and scrub vegetation, likely as a result to the constraints imposed by the existing substation infrastructure to the use of machinery and cultivation for intensive arable production. It is deemed that in a detailed ALC survey, this area would be mapped as being 'non-agricultural land'. Similarly, the area of the vegetation removal and infilling of the existing drainage pond to the south–east of the existing substation is provisionally mapped as being Grade 2 land, but it would not be viable or practical to manage this area for arable production in the same manner as the surrounding land outside of NGET's control. The construction of one new access (Work No. 10) and the extension of the temporary construction compound (Work No. 5D) forming part of the Proposed Change are mapped as occurring on provisional Grade 2 quality land, but these areas are mostly existing hardstanding (0.29 ha of hardstanding within construction compound area) or existing track and are, therefore, also not used for agricultural production. Based on the existing land use and the land's potential for agricultural production, the areas impacted by the Proposed Change are deemed to have Negligible sensitivity due to the low potential these areas have to be returned to agricultural production.

8.3.5 The extension of the Bicker Fen substation, inclusive of the Proposed Change involves the construction of the generation bay (Work No. 5A), substation extension (Work No. 5B), the cable sealing end and new tower (Work No. 5C), and access (Work No. 10). This will result in the permanent loss of a total of approximately 3 ha of land. Of this, the permanent loss of 2.7 ha was considered as part of **Chapter 14 Soils and Agricultural Land (APP-065)** and the additional 0.3 ha is as a result of the Proposed Change.

8.3.6 There is no change from the criteria used in Table 14.3 of **Chapter 14 Soils and Agricultural Land (APP-065)** for assessing the magnitude of the Proposed Change on agricultural land.

8.3.7 Whilst the substation extension works, inclusive of the Proposed Change, will result in permanent land use change for an area of <5 ha, none of this area is currently in use for agriculture and has low potential to be used for agriculture in the future (as discussed in paragraph 8.3.5). The substation extension inclusive of the Proposed Change on its own this would result in a Minor effect on Agricultural Land, which is Not Significant.

8.3.8 Although the Proposed Change now results in a lower level of effect for the substation extension with the reduced receptor sensitivity to what was originally assessed, the assessment of effects needs to take account of the impact the wider Cable Route Corridor has on Agricultural Land to be consistent with assessment made in **Chapter 14 Soils and Agricultural Land (APP-065)**. When combing the effect of the extension works with the effect of the works on the wider Cable Route Corridor, it makes no difference to the original assessment. The land being trenched for the laying of the able oute has a Very High receptor sensitivity and there is a Low magnitude of change (as detailed in section 14.8 of **Chapter 14 Soils and Agricultural Land (APP-065)**. It therefore results in a Major or Moderate (Significant) effect on Agricultural Land. This remains the same as the findings of **Chapter 14 Soils and Agricultural Land (APP-065)** for the Cable Route Corridor (see paragraph 14.13.19 of Chapter 14).

Soil Resource – Loss of Soil Resource

8.3.9 The additional areas affected as a result of the Proposed Change do not introduce new soil resources and, therefore, the sensitivity of the soil resource to erosion remains the same as in **Chapter 14 – Soils and Agricultural Land (APP-065)**. The Wallasea 2 (813g) association soils in the area of the substation have Low sensitivity to erosion due to their clayey texture.

8.3.10 The areas of land subject to soil disturbance increase slightly as a result of the Proposed Change. However, these changes do not change the magnitude of impact, which remains Low. With the embedded mitigation measures in place, it is assumed that any loss of the soil resource resulting from the substation extension works would be minimised and all impacts temporary, as good practice measures will be employed throughout the works. Any temporarily displaced soil would be reinstated to its baseline soil profile condition following the temporary construction works. Accounting for the Proposed Change, the total area of permanent soil disturbance remains less than the 5 ha threshold

in the IEMA (2022)[4] guidance for determining Low/Medium magnitude of change.

8.3.11 With the embedded mitigation in place, the potential resulting effect on the receptor 'Loss of Soil Resource' is Minor and Not Significant. Therefore, there is no change from the conclusions set out in the assessment in **Chapter 14 – Soils and Agricultural Land (APP-065)** as a result of the addition of the Proposed Change to the Proposed Development.

Soil Resource – Damage to Soil Resource

8.3.12 The sensitivity of the soil resource to structural damage remains the same as in **Chapter 14 Soils and Agricultural Land (APP-065)**. The Wallasea 2 (813g) soils present within the southern part of the Cable Route Corridor and the substation area are prone to structural damage due to their clayey textures and higher likelihood of waterlogging. However, accounting for the inclusion of embedded mitigation measures secured through the OSMP (**Appendix 14.4 Outline Soil Management Plan (REP1-013)**) being in place, including stop conditions and plasticity tests to prevent the handling of soils in unsuitable conditions, the sensitivity of these soils can be reduced to Medium.

8.3.13 As described above, with the embedded mitigation measures in place, it is assumed that any damage to the soil resource would be minimised as good practice measures will be employed, resulting in the areas of permanent soil disturbance being less than 5 ha. All other areas subject to soil disturbance would be temporary and reversible with no permanent damage. Therefore, the magnitude of change remains Low.

8.3.14 Accounting for the embedded mitigation, the resulting effect on the receptor 'Damage to Soil Resource' is Minor and Not Significant. There is therefore no change from the assessment made in **Chapter 14 – Soils and Agricultural Land (APP-065)** as a result of the addition of the Proposed Change to the Proposed Development .

Conclusion

8.3.15 The only significant effect during the construction phase is on the agricultural land receptor, resulting from the trench within the Cable Route Corridor, which is not changing as part of the Proposed Change. Whilst this assessment accounts for the slightly larger area (i.e. 0.3 ha) of land impacted by the Proposed Change, there is assessed to be no change from the assessment of impacts on agricultural land within the Cable Route Corridor made in **Chapter 14 – Soils and Agricultural Land (APP-065)**. This is due in part to the low agricultural potential of the land surrounding the substation, as well as the relatively small areas of additional land take involved.

Operation Phase Development Impacts

8.3.16 The extension of the substation will occur during the construction phase with no further loss of land or soil disturbance during the operational phase.

Conclusion

[4] Institute of Sustainability and Environmental Professionals (Formerly IEMA) (2022) A New Perspective on Land and Soil in Environmental Impact Assessment. Available at: https://www.iema.net/media/3xejdu0u/2022-iema_land_and_soils_guidance.pdf. [Accessed November 2025].

8.3.17 Operational phase impacts on agricultural land and the soil resources within the Cable Route Corridor and as a result of the substation extension were scoped out of the assessment in **Chapter 14 Soils and Agricultural Land (APP-065)**, and there has been no change to the scope in this assessment as a result of the Proposed Change.

Decommissioning Phase Development Impacts

8.3.18 The impact of the substation extension (including the Proposed Change) will occur during the construction phase. No decommissioning impacts are anticipated as the infrastructure at the Bicker Fen Substation will remain in situ and operated by National Grid (**Chapter 2: Proposed Development (APP-053)**).

Conclusion

8.3.19 Decommissioning phase impacts on agricultural land and soil resources within the Cable Route Corridor and as a result of the substation extension were scoped out of the assessment **Chapter 14 Soils and Agricultural Land (APP-065)** and there has been no change to the scope in this assessment as a result of the Proposed Change.

8.4 Mitigation Measures

8.4.1 The only significant effect identified is on the agricultural land receptor, for which the Applicant considers there is no additional mitigation possible (beyond the mitigation by design already implemented in the parameters of the Proposed Development). As such, no additional mitigation is proposed. This effect was identified and assessed in the **Chapter 14 Soils and Agricultural Land (APP-065)**, and there are no new or different significant effects which arise due to the Proposed Change. As such, additional mitigation is not considered further within this ES Addendum as it has not been identified as necessary.

Monitoring

8.4.2 In order to ensure compliance with the detailed Soil Management Plan(s), the works will be monitored during soil handling activities; thereby ensuring that the soils are maintained in good condition permitting the continued, sustainable use of the soil resource. No additional monitoring is proposed as a result of the Proposed Change as compared to the Proposed Development without the Proposed Change.

8.5 Residual Effects

8.5.1 As no additional mitigation measures are proposed, the residual effects remain as identified in the assessment above and in **Chapter 14 Soils and Agricultural Land (APP-065)**.

8.6 Assessment of Cumulative Effects

Intra-cumulative Impacts

8.6.1 There is no change to the assessment of intra-cumulative impacts in **Chapter 14 Soils and Agricultural Land (APP-065)** as a result of the Proposed Change.

Inter-cumulative Impacts

8.6.2 There is no change to the assessment of inter-cumulative impacts on soil resources included in **Chapter 14 Soils and Agricultural Land (APP-065)** as a result of the Proposed Change

8.6.3 The loss of agricultural land as a result of the Proposed Development contributes towards the cumulative losses of agricultural land in the local area and nationally. This was assessed as being a Moderate (significant) cumulative effect within **Chapter 14 Soils and Agricultural Land (APP-065)**. An updated assessment is provided below to account for the additional 0.3 ha of permanent land take as a result of the Proposed Change.

8.6.4 For the previous cumulative assessment in **Chapter 14 Soils and Agricultural Land (APP-065)**, a total of 589.85 ha of agricultural land was assessed as being lost for the Proposed Development. The loss of land was further broken down into permanent (29.99 ha) and temporary (559.86 ha) land loss.

8.6.5 Accounting for the increased permanent land loss associated with the Proposed Change, the total loss of agricultural land remains as 589.85 ha, broken down into 30.29 ha of permanent land loss and 559.56 ha of temporary land loss.

8.6.6 This increase of 0.3 ha permanent land take as a result of the Proposed Change does not change the outcome of the cumulative impact assessment provided in **Chapter 14 Soils and Agricultural Land (APP-065).**

8.7 Summary

8.7.1 The Proposed Change will result an increase of 0.3 ha in permanent land take within the area of associated with the change due to the increase in the area of the generation bay and inclusion of an OHL tower included within Work No. 5C. The Proposed Change only occurs relates to the area identified for the Bicker Fen substation extension and, therefore, only the assessment of likely effects on land (agricultural land) and soils (damage and loss) within this area has been re-assessed.

8.7.2 Embedded mitigation measures are secured through the OSMP (Appendix 14.4 Outline Soil Management Plan (REP1-013)) and the OCEMP (Appendix 2.4 Outline Construction Environmental Management Plan (REP1-009)). These documents will set out appropriate measures for minimising impacts on agricultural land and soils during construction, based on industry standard good practice guidance on soil handling and storage. There are no additional mitigation measures proposed.

Land

8.7.3 The substation extension works will result in 3 ha of permanent land use change, however, none of this area (including the 2.7 ha area originally assessed in **Chapter 14 Soils and Agricultural Land (APP-065)**) is currently

in use for agriculture and has little potential to be used for agriculture in the future. As the area of permanent land take remains <5 ha, the magnitude of change remains Low.

8.7.4 The substation extension works inclusive of the Proposed Change on its own results in a Minor Effect on Agricultural Land.

8.7.5 When combing the effect of the extension works with the effect of the works on the wider Cable Route Corridor, it makes no difference to the original assessment. The land being trenched for the laying of the cable has a Very High receptor sensitivity and there is a Low magnitude of change. This results in a Major or Moderate (Significant) effect on agricultural land. This is as per the findings in **Chapter 14 Soils and Agricultural Land (APP-065)** and remains unchanged as a result of the addition of the Proposed Change to the Proposed Development.

Soil Resource - Loss of Soil Resource

8.7.6 The Bicker Fen substation occurs within an area of the Wallasea 2 (813g) soil association which has Low sensitivity to soil erosion. There is a slight increase to the area of soil disturbance as a result of the Proposed Change, however, the magnitude of impact remains Low as the total area of permanent soil disturbance is <5 ha. The resulting effect on the soil resource receptor is therefore Minor and Not Significant, with no change to the assessment made in **Chapter 14 Soils and Agricultural Land (APP-065)**.

8.7.7

8.7.8

Soil Resource Damage to Soil Resource

8.7.9 Wallasea 2 (813g) soils are prone to structural damage if handled inappropriately due to a high clay content. However, accounting for the embedded mitigation measures described above, damage to the soil resource would be minimised as good practice measures will be employed. The sensitivity of these soils to structural damage is therefore reduced to Medium.

8.7.10 Including the Proposed Change, permanent soil disturbance as a result of the Bicker Fen substation extension is limited to an area of 3 ha. Therefore, the magnitude of change remains Low.

8.7.11

8.7.12 With the embedded mitigation, the resulting effect on the receptor ‘Damage to Soil Resource’ is Minor and Not Significant. This is as per the findings of **Chapter 14 Soils and Agricultural Land (APP-065)** and remains unchanged as a result of the Proposed Change assessed within this ES Addendum.

Operational and decommissioning phase impacts

8.7.13 Operational and decommissioning phase impacts on agricultural land and soil resources within the Cable Route Corridor were scoped out of the assessment in **Chapter 14 Soils and Agricultural Land (APP-065)**. The Proposed Changes do not alter the scope in this addendum.

Summary of Residual Effects

8.7.14 As there are no additional mitigation measures proposed, the residual effects remain as identified in the assessment above and in **Chapter 14 Soils and Agricultural Land (APP-065)**.

Summary of Inter-Cumulative Effects

8.7.15 The increase of in permanent land take as a result of the Proposed Change does not change the outcome of the cumulative impact assessment set out in in **Chapter 14 Soils and Agricultural Land (APP-065)**, which concludes that the effects are Moderate Adverse and Significant.

Conclusion

8.7.16 The addition of the Proposed Change to the Proposed Development results in no changes to the significance of effects on Agricultural Land or Soil Resources for the Cable Route Corridor concluded in **Chapter 14 Soils and Agricultural Land (APP-065)**. Table 8.1 provides a Summary Assessment Matrix for the Cable Route Corridor taking into consideration the Proposed Change. This is consistent with the findings of **Chapter 14 Soils and Agricultural Land (APP-065)** and remains unchanged as a result of the Proposed Change assessed within this ES Addendum.

Table 8.1 – Summary Assessment Matrix

Issue*	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Construction Phase												
Agricultural Land	Loss of Agricultural Land				X	X	X	X	Major / Moderate Adverse	Lt, R/Ir	Significant	Soil Management Plan implementing best practice guidance on soil handling
Soil Resources	Structural Damage							X	Minor Adverse	Lt, R/Ir	Not Significant	
Soil Resources	Loss through erosion							X	Minor Adverse	Lt, R/Ir	Not Significant	
Operational Phase												
Operational phase impacts have not been assessed for the Cable Route Corridor as there will be no further loss of land or soil disturbance during this phase.												
Decommissioning Phase												
Not applicable – no decommissioning activities proposed.												
All Phases												
Inter Cumulative Effects	Loss of Agricultural Land			X	X	X	X	X	Moderate Adverse	St R	Significant	Restoration back to agricultural land

*The impacts listed within this table are for the Cable Route Corridor, as considered within **Chapter 14 Soils and Agricultural Land (APP-065)** with no new impacts considered and no change to the resulting significance of effects.

Key:
Geographical Significance: I = International N = National R = Regional C = County D = District P = Parish L = Low to Local
Nature: St = Short Term Mt = Medium Term Lt = Long Term R = Reversible Ir = Irreversible

9. Socio-economics

9.1 Introduction

9.1.1 This Chapter reports on changes to the assessment of socio-economics effects reported in **Chapter 15 Socio-economics (APP-066)** resulting from changes to the proposed extension works at the Bicker Fen Substation (the Proposed Change), as described in **Chapter 2 Proposed Change** of this Environmental statement (ES) Addendum. This Chapter considers the effects from the Proposed Change on recreation, air quality, noise, and traffic from a socio-economic perspective.

9.1.2 This Chapter should be read in conjunction with **Chapter 15 Socio-economics (APP-066)** of the ES, which describes the assessment of effects on tourism, recreation and communities' socio-economic wellbeing, in relation to the Proposed Development prior to the Change Request, including in relation to proposed extension works at Bicker Fen Substation.

9.2 Baseline

9.2.1 As noted in **Figure 15.3 Public Rights of Way (APP-273)**, the LL/Bick/2/1 Public Right of Way (PRoW) is situated immediately to the east of the proposed Bicker Fen Substation extension, with LL/Bick/1/1 and LL/Doni/20/2 situated within circa 1.5km to the west and south, respectively.

9.2.2 There are several residential receptors that are within walking distance (c.2 km) of the PRoWs surrounding the Bicker Fen substation, including those along Bicker Drove, Cowbridge Road, and South Drove. These local residents are likely the primary and regular users of these PRoWs. The nearby roads considered include Vicarage Drove and Bicker Drove.

9.2.3 No tourist attractions or other recreational facilities of importance are available in proximity to the Bicker Fen substation. The popular Heckington Windmill is circa 7km to the north-west and the Egg Throwing Championships, as well as the Heckington Show, that take place once a year are circa 6.4km to the north-west of the Bicker Fen substation.

9.3 Assessment of Effects

Embedded Mitigation

9.3.1 As set out in **Appendix 2.4: Outline Construction Environmental Management Plan (OCEMP) (REP2-018),** secured pursuant to Requirement 12 in Schedule 2 to the **Draft DCO (Document Ref: 3.1)**, the Principal Contractor will establish and oversee a Community Engagement Plan that will outline the approach to engaging with the local community. This Plan will be managed by an appointed Community Liaison Officer (CLO), who will be responsible for addressing concerns and resolving complaints. Steps will be taken to inform neighbouring property occupiers and businesses in advance of construction activities. The CLO will be responsible for designing tailored engagement with vulnerable groups in the engagement plan.

9.3.2 A formal complaints procedure will be developed as part of the Community Engagement Plan, ensuring complaints are received, recorded, and responded to in a timely manner under the supervision of the CLO.

9.3.3 An **Outline Public Rights of Way Management Plan (REP2-039)** has been developed to manage effects on PRoW, including their closures. The Plan sets out how the Applicant will manage PRoWs for the Proposed Development to ensure they have been suitably considered and able to operate effectively, in terms of both user safety and accessibility.

9.3.4 The addition of the Proposed Change as part of the Proposed Development does not require changes to the existing mitigation measures listed above.

Sensitivity assessment

9.3.5 Receptors relevant to this assessment, as described in **Chapter 15 Socio-economics (APP-066)**, are PRoW users and local residents in Boston Borough. Sensitivity of PRoW users is Low, and sensitivity of Boston Borough residents is Medium. There is no change in receptor sensitivity identified in this Chapter as compared to **Chapter 15 Socio-economics (APP-066)**.

Construction Phase Development Impacts

Impact on recreation

9.3.6 Neither the construction activities nor construction-related traffic will have any physical impact, such as closure or diversion, on the three PRoWs (being LL/Bick/2/1, LL/Bick/1/1 and LL/Doni/20/2).

9.3.7 Visual effects from the Proposed Change during construction are not expected to have an additional material effect on users of LL/Bick/1/1, LL/Doni/20/2 and LL/Bick/2/1. Overall, the visual impact during construction for LL/Doni/20/2 and LL/Bick/2/1 remains as a Major adverse effect (**Significant**).

9.3.8 As assessed in **Chapter 4 Landscape and Visual** of this ES Addendum, the Proposed Change will not significantly alter visual impact for PRoW users or, owing to their distance from the Bicker Fen Substation, touristic attraction receptors, as compared to the assessment in **Chapter 15 Socio-economics (APP-066)** of the Original ES. Thus, the overall Minor adverse effect (**Not Significant**) on reduction of tourist and recreational attraction remains the same when the Proposed Change is included as part of the Proposed Development.

Socio-economics effects from increased traffic

9.3.9 As assessed in **Chapter 7 Access and Traffic** of this ES Addendum, during the construction phase, the changes in traffic impact as compared to the previously assessed construction traffic impacts as a result of the Proposed Change will be relatively low, both in percentage and absolute terms. Details of the assessment are provided in **Chapter 7 Access and Traffic**. The socio-economic effect from increased traffic during construction remains as a Minor adverse effect (**Not Significant)**.

Socio-economics, wellbeing and health effects from air quality and noise effects

9.3.10 As set out in **Chapter 11 Air Quality** of the ES addendum, construction dust impacts remain unchanged from that presented in **Chapter 16 Air Quality (APP-067)** and the effect is Not Significant.

9.3.11 Construction noise in relation to the extension works to the substation was previously scoped out due to receptors being outside the Area of Influence (AoI) for noise, as the Bicker Fen substation works were assessed as unlikely to result in any noticeable increase in noise levels at nearby receptors (**Chapter 10 Noise and Vibration (APP-061)**). Consequently, no wellbeing and socio-economic effects are expected from noise.

9.3.12 When considering the Proposed Change, there is no change to the conclusions of **Chapter 15 Socio-economics (APP-066)** of the Original ES and therefore no significant impacts relating to air quality and noise are anticipated in relation to the Proposed Change.

Conclusion

9.3.13 The Proposed Change will not lead to permanent or temporary closure of nearby PRoWs and the increase in visual impact effects is not material, compared with that already assessed in the Original ES. Thus, overall the impact on PRoW users remains unchanged as a Minor adverse effect (**Not Significant**).

9.3.14 Owing to the distance between the Proposed Change and identified touristic attractions, no change to touristic attractiveness from the initial assessment is identified and it remains as a Minor adverse effect (**Not Significant**).

9.3.15 Traffic and transport, air quality and noise-related impacts of the Proposed Change are not material and, therefore, socio-economic impacts stemming from these are also negligible, **Not Significant**. There is no change in the magnitude of these socio-economic impacts as compared to the original ES assessment without the Proposed Change.

Operation Phase Development Impacts

Impact on recreation

9.3.16 The operational phase will have no physical impact (e.g. closure, diversion) on the three PRoWs (LL/Bick/2/1, LL/Bick/1/1 and LL/Doni/20/2). As reported in **Chapter 4 Landscape and Visual** of this ES addendum, the change in visual effects has been assessed as minor adverse (**Not Significant**) during the operational phase for LL/Bick/1/1, LL/Doni/20/2 and LL/Bick/2/1.

9.3.17 As with construction, the Proposed Change during the operational will not significantly alter visual impact for PRoW users as assessed in **Chapter 7 Landscape and Visual (APP-057)** or, owing to their distance from the Bicker Fen Substation, touristic attraction receptors, in addition to that which was previously assessed in **Chapter 15 Socio-economics (APP-066)**. Thus, an overall Minor adverse effect (**Not Significant**) on reduction of tourist and recreational attraction remains, which is unchanged as compared to the assessment of the Proposed Development without the Proposed Change.

Socio-economics effects from increased traffic

9.3.18 **Chapter 7 Access and Traffic** of this addendum quotes section 9.6.11 of **Chapter 9 Access and Traffic (APP-060)** to present reasons for scoping out

of operational traffic impacts. **Chapter 7 Access of and Traffic** of the ES addendum further concludes that the Proposed Change will not result in any material change to operational traffic generation at the Bicker Fen Substation and no further assessment in respect of the Proposed Change is required as part of this application.

Socio-economics wellbeing and health effects from air quality and noise

9.3.19 As set out in paragraph above, the Proposed Change will not result in any material change to operational traffic generation at Bicker Fen Substation and, thus, is not expected to impact air quality. Air pollution can result in adverse human health effects, impacting wellbeing. Since no changes in air quality due to the Proposed Change are expected, there will be no impact on health and wellbeing

9.3.20 Operational noise in relation to the substation was previously scoped out as receptors are outside the AoI for noise. With the inclusion of the Proposed Change, this is not altered, as no significant wellbeing and socio-economic effects related to noise are anticipated.

Conclusion

9.3.21 There is no material change to the conclusions of **Chapter 15 Socio-economics** in relation to operational phase socio-economic impacts and the effects on PRoW users and Boston Borough residents remain negligible (**Not Significant**), which is unchanged as compared to the assessment of the Proposed Development without the Proposed Change.

Decommissioning Phase Development Impacts

9.3.22 No decommissioning works are proposed for the Bicker Fen Substation at the end of the project's lifetime. It is assumed that that the infrastructure will remain in situ and under the control of National Grid (see **Chapter 2 – Proposed Development (APP-053)**). This is unchanged as compared to the assumptions made for the Proposed Development without the Proposed Change.

9.4 Mitigation Measures

9.4.1 No significant socio-economic effects are anticipated from the Proposed Change and no additional mitigation measures beyond the embedded mitigation measures outlined in paragraphs 9.3.1 to 9.3.3 are required.

9.5 Residual Effects

9.5.1 There is no change from that reported in Section 9.3 above. The residual effects remain minor adverse (**Not Significant)** for PRoW users and tourism during construction, and negligible traffic and transport, air quality and noise-related impacts for Boston Borough residents. During operations, the effects on PRoW users and Boston Borough residents remain negligible (**Not Significant)**. Residual effects are unchanged as compared to the assessment of the Proposed Development without the Proposed Change.

9.6 Assessment of Cumulative Effects

Intra-cumulative Impacts

9.6.1 Elements of the assessments of Access and Traffic, Noise and Vibration and Landscape and Visual are included within the above Assessment of Effects in section 9.3, as impact pathways for socio-economic effects may occur as a result of effects relating to these environmental topics, potentially giving rise to significant intra-cumulative impacts. There are no additional intra-cumulative effects identified in this Chapter, as compared to the assessment of the Proposed Development without the Proposed Change.

Inter-cumulative Impacts

9.6.2 As set out in Section 15.8 of **Chapter 15 Socio-economics (APP-066),** the effect of demand on local accommodation during the construction phase was assessed to be **Significant** before mitigation. This is because of the cumulative number of construction workers affecting accommodation availability. There is assumed to be one additional return minibus journey per day of up to 14 staff, resulting in a maximum increase of circa 3.5% in the number of workers during a peak construction month. This increase is not material and, therefore, no change from the findings in **Chapter 15 Socio-economics (APP-066)** on inter-cumulative effects is expected and residual effect remains minor adverse (**Not Significant**).

9.7 Summary

9.7.1 Taking into account the Proposed Change, no new or different mitigation measures (in addition to the embedded mitigation) are required and residual effects remain minor adverse (**Not Significant**) for PRoW users and tourism during construction, and negligible traffic and transport, air quality and noise-related impacts for Boston Borough residents. During the operation of the Proposed Development, the effects on PRoW users and Boston Borough residents remain negligible, **Not Significant**. Socio-economic effects remain unchanged as compared to the assessment of the Proposed Development without the Proposed Change.

Table 9.1 – Summary Assessment Matrix

Issue	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Socio-economics												
No significant effects identified												

10. Water Resources & Flood Risk

10.1 Introduction

10.1.1 This Chapter reports on changes to the assessment of water resources and flood risk effects reported in **Chapter 11 – Water Resources and Flood Risk (APP-062)** resulting from changes to the proposed extension works at the Bicker Fen Substation (the Proposed Change), as described in **Chapter 2: Proposed Change** of this ES Addendum.

10.1.2 For the purposes of this Chapter, the Original Submission Works Plan (**Works Plan (AS-006)**) - is referred to as the 'submitted Works Plan' and the Proposed Change Works Plan (**Works Plan (Document Ref: No. 2.4)**) is referred to as the 'change Works Plan'.

10.1.3 This Chapter should be read in conjunction with **Chapter 11 – Water Resources and Flood Risk (APP-062)** of the Environmental Statement (ES) and its appendices, which describes the assessment of effects of water resources and flood risk in relation to the Proposed Development prior to this Change Request, including in relation to proposed extension works to Bicker Fen Substation.

Baseline

10.1.4 As the Proposed Change does not alter the Order Limits, the baseline remains as described in Sections 11.3 and 11.5 of **Chapter 11 – Water Resources and Flood Risk (APP-062)**. In summary, the hydrological and hydrogeological baseline for the Bicker Fen Substation site comprises of:

- Superficial deposits comprised of Tidal Flat Deposits (clay and silt), which are classed on unproductive strata;
- Bedrock of the Oxford Clay Formation (mudstone), which is classed as unproductive strata;
- The Bicker Fen Substation site is within the 'Black Sluice IDB draining to the South Forty Foot Drain' surface water catchment with a number of Black Sluice Internal Drainage Board controlled drains within and surrounding the Order Limits;
- The are no Environment Agency licenced abstractions and permitted discharges or registered private water supplies within the Order Limits or within 500 m of the Bicker Fen Substation site; and
- The Bicker Fen Substation site is located within Flood Zone 3.

Assessment of Effects

Embedded Mitigation

10.1.5 The Proposed Change does not affect the embedded mitigation proposed in Section 11.7 of **Chapter 11 – Water Resources and Flood Risk (APP-062)** and summarised in **Appendix 2.3 Embedded Mitigation (APP-076)**. The embedded mitigation is secured via Requirement 5 (detailed design), Requirement 10 (surface and foul water drainage), Requirement 12 (Construction Environmental Management Plan) and Requirement 19

(Decommissioning Environmental Management Plan) of the **Draft DCO (Document Ref: 3.1)**.

Construction and Operational Phase Impacts

10.1.6 The Proposed Change does not affect the assessment of construction or operational phase impacts as described in Section 11.7 of **Chapter 11 – Water Resources and Flood Risk (APP-062)**. The assessment remains that, with the embedded mitigation in place, no significant effects on the water environment are identified.

10.1.7 As described in **Chapter 2 - Proposed Development (APP-053)** it is anticipated that the works undertaken as part of the extension at the Bicker Fen Substation site will remain in situ during and following decommissioning of the Proposed Development. This would remain under NGET's control.

Mitigation Measures

10.1.8 As the Proposed Change does not affect the assessment of effects, the assessment presented in Section 11.7 of **Chapter 11 – Water Resources and Flood Risk (APP-062)** remains extant. As presented in Table 11.15 of **Chapter 11 – Water Resources and Flood Risk (APP-062)**, when taking into account embedded mitigation, there are no significant effects anticipated as a result of the Proposed Development. Therefore, no additional mitigation is required beyond the embedded mitigation set out in Section 11.7 of **Chapter 11 – Water Resources and Flood Risk (APP-062)**.

Residual Effects

10.1.9 As no additional mitigation is required beyond the embedded mitigation set out in Section 11.7 of **Chapter 11 – Water Resources and Flood Risk (APP-062)** the residual effects are as previously identified in Section 11.9 of **Chapter 11 – Water Resources and Flood Risk (APP-062)** (i.e. not significant).

Assessment of Cumulative Effects

10.1.10 The Proposed Change does not alter the assessment of intra-cumulative or the inter-cumulative effects presented in Section 11.10 of **Chapter 11 – Water Resources and Flood Risk (APP-062)**. The assessment remains that, with the embedded mitigation in place, no significant effects on the water environment are identified.

Summary

10.1.11 The Order Limits will not be extended or altered as a result of the Proposed Change, therefore there is no change to the baseline description provided in Sections 11.3 and 11.5 of **Chapter 11 – Water Resources and Flood Risk (APP-062)**. The Proposed Change does not introduce new activity types, which were not considered as part of the assessment in Sections 11.7, 11.9 and 11.10 of **Chapter 11 – Water Resources and Flood Risk (APP-062)**. Therefore, the Proposed Change does not alter the conclusions of **Chapter 11 – Water Resources and Flood Risk (APP-062)**. The assessment remains that, with the embedded mitigation in place, no significant effects on the water environment are identified.

10.2 Appendix 11.1 Flood Risk Assessment

Baseline Flood Risk

10.2.1 The Order Limits will not be extended or altered as a result of the Proposed Change. The findings within Section 5.1 of **Appendix 11.1 Flood Risk Assessment (APP-162)** regarding the existing baseline flood risk for fluvial, surface water, groundwater, reservoir and artificial flooding, therefore, remain valid.

Post Development Flood Risk

Fluvial Flooding

10.2.2 The Proposed Change does not include any additional extension into the floodplain. There are, therefore, no additional features with the potential to increase the loss of floodplain storage.

10.2.3 A new OHL tower is to be installed within the revised area of Work No. 5C. The tower will be supported by four legs, each leg will require a square excavation of up to 7m by 7m wide and up to 5m deep. This will be an excavation below current ground level and will not, therefore, displace floodwater or alter flood flows.

10.2.4 **Appendix 11.1 Flood Risk Assessment (APP-162)**, found that the proposed extension works in the submitted Works Plan (**Works Plan AS-006**) would have an impact on the capacity of the floodplain and could also have a minor impact on flood flow routing locally. It is not anticipated that the change Works Plan as shown in **Works Plan (Document Ref: No. 2.4)** will increase the volume of floodplain storage lost and this will not have any additional impacts on flood flow routes.

Surface Water (Pluvial) Flood Risk

10.2.5 The location of structures within Works No. 5A and 5B at the Bicker Fen National Grid Substation site, are not subject to change in the change Works Plan. A new OHL tower is to be installed within the revised area of Work No. 5C. This will be supported by four legs each on a square excavation of up to 7m by 7m wide and up to 5m deep. This will be an excavation below current ground level and will not, therefore, result in any impediment or diversion of existing overland flow routes. **Appendix 11.1 Flood Risk Assessment (APP-162)** found that there will be no impact on surface water flooding for the submitted Works Plan. This is also the case for the change Works Plan.

Surface Water Runoff

10.2.6 The areas covered by Work Nos. 5C and 5D within the Bicker Fen Substation, as shown on **Works Plan (Document Ref: No. 2.4)** are larger in area than the equivalent areas shown on the original submission .

10.2.7 On Work No. 5D (temporary laydown area) will incorporate an additional area of land adjacent to the substation comprising landscaping and an existing aggregate compound area. Work No. 5C will extend into an area to the south-east of the substation as a result of the Proposed Change.

10.2.8 All areas of Work No. 5C will comprise impermeable and semi-permeable surfacing. Whereas, the proposed area of impermeable surfacing within Work

No. 4A will be minimal and confined to the 30m maximum construction working width associated with the Cable Route during the installation of the cable.

10.2.9 The extension of Work No's. 5C and 5D as part of the Proposed Change will, therefore, increase the area of impermeable and semi-permeable surfacing during the construction phase. The overall rate and volume of surface water runoff generated as a result of the Proposed Change will also, therefore, increase.

10.2.10 Furthermore, as part of Work No. 5C, for the purposes of this assessment it is assumed that the existing surface water attenuation pond in the south-west of the substation will be infilled. The outline drainage strategy proposed within Section 8 of **Appendix 11.1 Flood Risk Assessment (APP-162)** considers surface water runoff from the currently proposed (i.e. the Proposed Development without the Proposed Change) Work Plan areas only, and does not consider drainage for the existing substation site. A revised surface water drainage strategy that considers the impermeable surfacing extents within the Works Areas shown on **Works Plan (Document Ref: No. 2.4)** is, therefore, required to account for effects of the Proposed Change. Further detail is provided below.

Outline Surface Water Management Strategy updates for the Proposed Change

Drainage Rationale

10.2.11 The underlying geology comprises Oxford Clay Formation (mudstone) overlain by clay and silt tidal flat deposits and the soil type is classified as 'loamy and clayey' and it is considered, therefore, that surface water runoff could not be dispersed solely by infiltration. Surface water runoff will, therefore, be discharged to the watercourse network at a restricted greenfield rate of 1.44 l/s/ha. This follows the same strategy proposed for the Proposed Development without the Proposed Change.

10.2.12 The drainage rationale will follow the same rationale proposed for the BESS and Onsite Substation within the Solar Array Area, with surface water runoff attenuated within detention basin features and within the void space of the loose aggregate surrounding the units and structures. Sufficient attenuation will be provided for all return periods up to and including the 1 in 100 year+ climate change return period.

10.2.13 The proposed drainage network will provide appropriate water quality treatment prior to discharge offsite through the use of Sustainable Drainage Systems (SuDS). Treatment will be provided by the detention basin(s), with further treatment provided in the upstream network by features such as swales, filter strips, filter drains or manufactured proprietary treatment devices such as bypass separators.

10.2.14 The detailed design of the surface water drainage network and the location of the outfall will be confirmed post-consent at the detailed design stage. This is secured by Requirement 10 of the **Draft DCO (AS-010)** which requires the production, approval and implementation of a surface water drainage scheme and must be substantially in accordance with the principles in the outline drainage strategy (being Section 8 of **Appendix 11.1 Flood Risk Assessment (APP-162)**).

Outline Surface Water Drainage Strategy – Construction Phase

10.2.15 During the construction phase, aggregate or matting will be used across all landscaped areas within Work Nos. 5A, 5B, 5C and 5D. Whilst the matting and aggregate will provide some permeability and will reduce the rate and volume of runoff, in order to provide a worst case estimate of the required attenuation volumes, it has been assumed that all areas will be 100% impermeable.

10.2.16 The cable trench, access track and laydown area for the Cable Route within Work No. 4A will be confined to a 30m working width. In the submitted Works Plan, land to the east of the existing substation is assigned to Work No. 4A, only. In the change Works Plan, the 2.5ha area of land to the east of the existing substation is also utilised for Work No. 5C which, as detailed above, is assumed to be 100% impermeable during the construction phase for the purposes of estimating the required surface water attenuation volumes.

10.2.17 Work No. 5D incorporates an existing 0.29ha compound area immediately beyond the operational fenceline, and a further 0.64ha of existing open ground. It is also assumed that this area will be 100% impermeable during the construction phase.

10.2.18 Table 10. summarises the difference in contributing impermeable areas between the submitted Works Plan (**Works Plan (AS-006)**) and change Works Plan (**Works Plan (Document Ref: No. 2.4)**) during the construction phase (i.e. the Proposed Development with and without the Proposed Change).

Table 10.1 – Difference in Impermeable Areas – Construction Phase

WORK AREA	EFFECTIVE IMPERMEABLE AREA		
	SUBMITTED WORKS PLAN (AS-006)	CHANGE WORKS PLAN (DOCUMENT REF: NO. 2.4)	DIFFERENCE
5A, 5B and 5C	2.94 ha	5.41 ha NOTE 1	*2.47 ha*
5D	1.67 ha	2.16 ha NOTE 2	*0.49 ha*
4A	2.36 ha	0 ha	*-2.36 ha*
Existing Substation	7.43 ha NOTE 3	7.14 Ha	*-0.29 ha*
Total	**14.40 ha**	**14.71 Ha**	**0.31 ha**

Notes
1. Now incorporates Area 4A, Total footprint of Area 4A also increases by 0.11ha
2. Area 5D includes 0.29 ha existing aggregate compound and additional landscaped area
3. 0.29 ha existing aggregate compound included within Existing Substation – becomes part of Works No 5D in Proposed Change Works Plan (Document Ref: 2.4)

10.2.19 Table 10., below, provides a summary of the difference in surface water attenuation requirements between the submitted Works Plan and change Works Plan during the construction phase. Calculations are included in **Appendix 10.1** of this ES Addendum.

Table 10.2 – Attenuation Difference (Works Plan (AS-006) vs. Works Plan (Document Ref. No. 2.4)) – Construction Phase

RETURN PERIOD	REQUIRED ATTENUATION NOTE 1		
	SUBMITTED WORKS PLAN (AS-006)	CHANGE WORKS PLAN (DOCUMENT REF: 2.4)	DIFFERENCE
1 IN 30 +35% CC	8,422m^3	9,732m^3	+1,310m^3

RETURN PERIOD	REQUIRED ATTENUATION NOTE 1		
	SUBMITTED WORKS PLAN (AS-006)	CHANGE WORKS PLAN (DOCUMENT REF: 2.4)	DIFFERENCE
1 IN 100 +40% CC	11,221m^3	13,362m^3	+2,141m^3

Notes
1. Calculations assume no infiltration to ground.

10.2.20 The Proposed Development with the Proposed Change will, therefore, result in an increase in the rate and volume of surface water runoff during the construction phase, when compared to the Proposed Development without the Proposed Change. Notwithstanding this, the existing attenuation pond will be replaced with a feature(s) that will be designed to accommodate the 1 in 100 year +40% CC attenuation volume (see Table 10., above). If the pond is to be retained, this can be upsized or supplemented with additional attenuation to provide the required volume of storage.

10.2.21 There will, therefore, be no increased risk of flooding and it is considered that the findings within **Appendix 11.1 Flood Risk Assessment (APP-162)** remain valid. It is proposed that attenuation is provided within detention basins, either as a single feature or several smaller detention basins across the Bicker Fen Substation site.

Outline Surface Water Drainage Strategy – Operational Phase

10.2.22 Following the completion of the construction phase, all aggregate and matting required for construction within the work areas for Work No. 4A, 5A, 5B, 5C and 5D will be removed. The operational work areas will comprise the following surfacing:

- Work No. 4A and 5C: the area will be revegetated with the exception of the new OHL tower foundations for each leg (which will comprise impermeable concrete approximately 7m by 7m in dimension per leg (of which there is 4 in total)).
- Work No. 5A and 5B: 1.1 ha AIS/GIS structure plus surrounding concrete surfacing, 1.1 ha aggregate within a compound area.
- Work No. 5D: it is assumed that the 0.29 ha of existing aggregate will be retained as a compound serving the wider Bicker Fen Substation site. The existing access road will also be retained. All other areas will be revegetated.

10.2.23 Table 10.3, below, summarises the difference in contributing impermeable areas between the Proposed Development with and without the Proposed Change, during the operational phase.

Table 10.3 – Difference in Impermeable Areas – Operational Phase

WORK AREA	EFFECTIVE IMPERMEABLE AREA		
	SUBMITTED WORKS PLAN (AS-006)	CHANGE WORKS PLAN (DOCUMENT REF: NO. 2.4)	DIFFERENCE
5A, 5B, 5C	2.2ha	2.2ha	*0ha*
5D	0.48ha *NOTE 1*	0.77ha *NOTE 2*	*+0.29ha*
4A NOTE 3	-	-	-
Existing Substation	7.43ha	7.14ha	*-0.29ha*

WORK AREA	EFFECTIVE IMPERMEABLE AREA		
	SUBMITTED WORKS PLAN (AS-006)	CHANGE WORKS PLAN (DOCUMENT REF: NO. 2.4)	DIFFERENCE
Total	**10.11ha**	**10.11ha**	**0ha**

Notes
1. 5D comprises retained access road – all other areas will be revegetated
2. Assumes 0.29ha of existing aggregate within 5D is retained following construction
3. Land to south-east of the substation will be revegetated

10.2.24 Table , below, provides a summary of the difference in surface water attenuation requirements between the Proposed Development with and without the Proposed Change during the operational phase. Calculations are included in **Appendix 10.1** of this ES Addendum.

Table 10.4 – Attenuation Difference (Works Plan (AS-006) vs. Works Plan (Document Ref: 2.4))– Operational Phase

RETURN PERIOD	REQUIRED ATTENUATION NOTE1		
	WORKS PLAN (AS-006)	WORKS PLAN (DOCUMENT REF:. NO. 2.4)	DIFFERENCE
1 IN 30 +35%CC	6,688m^3	6,688m^3	0m^3
1 IN 100 +40% CC	9,054m^3	9,054m^3	0m^3

Note
1. Calculations assume no infiltration to ground.

10.2.25 The Proposed Change will have no additional impact on the rate and volume of surface water runoff during the operational phase.

10.2.26 As the contributing impermeable area and associated attenuation requirement will reduce following the completion of the construction phase in both scenarios (i.e. the Proposed Development with and without the Proposed Change), the detention basin(s) installed during the construction phase will provide sufficient attenuation during the operational phase.

10.3 Conclusion

10.3.1 It is considered that the Proposed Change will not alter the existing baseline flood risk from all sources. There will also be no additional loss of floodplain storage or impact on fluvial and surface water flood flow routes. The findings within **Appendix 11.1 Flood Risk Assessment (APP-162)**, therefore, remain valid in this regard. Likewise, the Proposed Change does not change the conclusions **of Chapter 11 – Water Resources and Flood Risk (APP-062)**.

10.3.2 There will, however, be an increase in impermeable area for the Proposed Development with the Proposed Change, compared to without the Proposed Change, during the construction phase. The existing drainage network within the Bicker Fen Substation site will need to be modified in order to accommodate the additional attenuation volume required. An outline surface water drainage strategy relating specifically to the Proposed Change has been detailed above**.** This demonstrates that there will be no increased risk of flooding to downstream areas and no impact on water quality as a result of the Proposed Change. A detailed surface water drainage design will be prepared post-consent at the detailed design stage. This is secured via Requirement

10 of the **Draft DCO (Document Ref: 3.1)** which requires the production, approval and implementation of a surface water drainage scheme and (if any) foul water drainage system, both of which must be substantially in accordance with the principles in the outline drainage strategy (being Section 8 of **Appendix 11.1 Flood Risk Assessment (APP-162)**).If this Change Request is accepted by the Examining Authority, the Flood Risk Assessment will be updated accordingly.

Table Error! No text of specified style in document.**5 – Summary Assessment Matrix**

Issue	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Water Resources												
The Proposed Change does not alter the description of the baseline water environment or include activities which have not been considered in the **Chapter 11 – Water Resources and Flood Risk (APP-062)** assessment. Therefore, there is no change to the finding of the assessment of effects or the cumulative effect assessment i.e. **no significant effects**.												
Key: Geographical Significance: I = International N = National R = Regional C = County D = District P = Parish L = Low to Local Nature: St = Short Term Mt = Medium Term Lt = Long Term R = Reversible Ir = Irreversible												

11. Air Quality

11.1 Introduction

11.1.1 This Chapter reports on changes to the assessment of air quality effects reported in **Chapter 16 Air Quality (APP-067)** resulting from changes to the proposed extension works at the Bicker Fen Substation (the Proposed Change), as described in Chapter 2: Proposed Change of this ES Addendum.

11.1.2 This Chapter should be read in conjunction with **Chapter 16 Air Quality (APP-067)** of the Environmental Statement (ES), which describes the assessment of air quality effects in relation to the Proposed Development prior to the introduction of the Proposed Change, including in relation to proposed extension works to Bicker Fen Substation.

11.2 Baseline

11.2.1 The Proposed Change is wholly located within the administrative area of Boston Borough Council (BBC), which is responsible for the management of local air quality within the district.

11.2.2 The most recent Air Quality Annual Status Report (ASR) 2025[5] states that there is currently one Air Quality Management Area (AQMA) declared within BBC's administrative area. This is the Haven Bridge AQMA, which is located in the centre of Boston, approximately 13.5 km east of the Bicker Fen Substation site. The Bicker Fen Substation site is, therefore, not located in or near to any existing AQMA or a known area of concern for air quality in relation to human health.

11.2.3 The 2025 ASR for BBC (which is the most recent available published data) confirms that, in 2023, BBC undertook air quality monitoring by means of nitrogen dioxide (NO_2) diffusion tubes at 15 locations; these locations are allin Boston approximately 13.5 km from the Bicker Fen Substation site. The closest air quality monitoring location to the Bicker Fen Substation site is a kerbside location operated by neighbouring North Kesteven District Council (NKDC) in Heckington, approximately 7.3 km to the north-west of the Bicker Fen Substation Site, which reported an annual mean concentration for NO_2 of 13.0 µg/m^3 in 2023 (which is the most recent published data[6]) which is well below the annual mean objective of 40 µg/m^3.

11.2.4 In order to provide information on the local background air quality in the absence of data being available from a representative background monitoring location, background pollutant concentrations have been obtained from the 2021-based default concentration maps provided by Defra on their Local Air Quality Management web pages[7]. The background concentrations used in the assessment are detailed in Table 11.1 below, and confirm that concentrations are well below the relevant objectives for all pollutants.

[5] BBCC, 2025 Air Quality Annual Status Report, June 2025.
[6] NKDC, 2024 Air Quality Annual Status Report, June 2024
[7] Defra LAQM webpages (http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html).

Table 11.1 – Background NO_x, NO_2, PM_{10} and $PM_{2.5}$ Concentrations Obtained from the 2021-Based Defra Default Concentration Maps

GRID SQUARE	2025 BACKGROUND CONCENTRATIONS (µg/m³)			
	OXIDES OF NITROGEN (NO_X)	NITROGEN DIOXIDE (NO_2)	FINE PARTICULATE MATTER (PM_{10})	FINE PARTICULATE MATTER ($PM_{2.5}$)
519624, 338436	6.69	5.33	13.31	5.88

11.2.5 As the Order Limits are unchanged and the previous assessment was based on these limits, there are no changes to the receptors reported in Table 16.2 of **Chapter 16 Air Quality (APP-067)**.

11.3 Assessment of Effects

Embedded Mitigation

11.3.1 As noted in Section 6.6 of **Chapter 16 – Air Quality (APP-067)**, in accordance with the methodology detailed in the Institute of Air Quality Management (IAQM)[8] guidance, the construction phase assessment assumes that no site-specific mitigation measures are applied, except those required by legislation (e.g. onsite activities to operate in accordance with the Environmental Permitting Regulations 2016 (i.e. Process Guidance Notes 3/16 and 3/1)).

11.3.2 **Appendix 2.4 Outline CEMP (Revision 3) (REP2-017)**, secures (pursuant to Requirement 12 in Schedule 2 to the **Draft DCO (Document Ref: 3.1)**), contains best practice dust mitigation measures based on the IAQM guidance, and will be implemented during the relevant works.

Construction Phase Development Impacts

11.3.3 The construction dust assessment included within Section 16.6 of **Chapter 16 Air Quality (APP-067)** concluded that the overall impact of construction dust via dust soiling and human health effects of particulate matter (PM_{10}) would be **Not Significant**.

11.3.4 This assessment was undertaken in accordance with the relevant guidance from the IAQM on the anticipated scale of construction works and the number and sensitivity of receptor locations within 250m of the Order Limits, which remain unchanged in relation to the Proposed Change.

11.3.5 In comparison to the Original ES (see **Chapter 16 Air Quality (APP-067)**), it is considered that the magnitude of construction impacts will increase from Medium to Large as a result of the Proposed Change, but when the area sensitivity (based on the number/sensitivity of receptors within set distances) is factored in, the overall impact under the IAQM guidance remains unchanged.

11.3.6 Table 11.2, below, updates Table 16.4 in the **Chapter 16 Air Quality (APP-067)** to account for the Proposed Change.

Table 11.2 – Updated Construction Phase Dust Assessment for Human Receptors

	ACTIVITY			
	DEMOLITION	EARTHWORKS	CONSTRUCTION	TRACKOUT
Step 2A				

[8] Institute of Air Quality Management (IAQM), Assessment of Dust from Demolition and Construction v2.2 (January 2024).

	ACTIVITY			
	DEMOLITION	EARTHWORKS	CONSTRUCTION	TRACKOUT
Dust Emission Magnitude	N/A	Large[a]	Large[b]	Large[c]
Step 2B				
Sensitivity of Closest Receptors	N/A	High	High	High
Sensitivity of Area to Dust Soiling Effects	N/A	Medium	Medium	Low
Sensitivity of Area to Human Health Effects	N/A	Low[d]	Low[d]	Low[d]
Step 2C				
Dust Risk: Dust Soiling	N/A	Medium Risk	Medium Risk	Low Risk
Dust Risk: Human Health	N/A	Low Risk	Low Risk	Low Risk

a. Total site area estimated to be more than 110,000m^2 – worst-case assumption.
b. Total building volume estimated to be greater than 75,000m^3, with potentially dusty construction materials – worst-case assumption.
c. Number of construction phase vehicles predicted to be greater than 50 peak movements per day.
d. Background annual mean PM_{10} concentration is taken from the LAQM Defra default concentration maps, for the appropriate grid square for 2025.

11.3.7 The traffic generation of the Proposed Development during the construction phase reported in **Chapter 16 Air Quality (APP-067)** was up to 67 Annual Average Daily Traffic (AADT) overall and 44 AADT for Heavy Goods Vehicles (HGV). This is well below the applicable criteria for detailed assessment under the applicable IAQM guidance[9], which sets a threshold of a change of 500 AADT overall or 100 AADT for HGVs outside an AQMA, at which point the potential for a significant adverse impact requires a detailed (modelled) assessment of vehicle emissions.

11.3.8 The increase of construction traffic as a result of the Proposed Change, compared with that already assessed within in **Chapter 16 Air Quality (APP-067)** is 5.4 AADT overall and 3.7 AADT for HGVs (see **Chapter 7 Access and Traffic** of this ES Addendum. The overall development-generated traffic, therefore, remains well below the assessment thresholds and, as such, no further assessment of potential air quality impacts in relation to construction traffic emissions is required.

Conclusion

11.3.9 It is, therefore, determined that the overall conclusions of **Chapter 16 Air Quality (APP-067)** in relation to construction dust impacts remain unchanged and the effects remain **Not Significant**.

Operation Phase Development Impacts

11.3.10 As set out in section 9.6.11 of **Chapter 9 Access and Traffic (APP-060)**, operational traffic impacts are scoped out of the assessment, except in relation to equipment replacement on the main Solar Array Area. The Proposed Change will not result in any material change to operational traffic generation at Bicker Fen substation, therefore the Proposed Change is not expected to have any air quality impact in the operational phase.

Conclusion

[9] Moorcroft and Barrowcliffe. et al. (2017) Land-use Planning & Development Control: Planning for Air Quality. v1.2. Institute of Air Quality Management, London

11.3.11 The conclusions of **Chapter 16 – Air Quality (APP-067)** in relation to operational phase impacts remains unchanged and the effect remain **Not Significant**.

Decommissioning Phase Development Impacts

11.3.12 No decommissioning works are proposed for the Bicker Fen Substation at the end of the Proposed Development's lifetime as it is assumed that that the substation site will remain in situ and under the control of National Grid Electricity Transmission (NGET) (see **Chapter 2 Proposed Development (APP-053)**) during and after decommissioning.

Conclusion

11.3.13 No air quality impacts are anticipated in relation to decommissioning.

11.4 Mitigation Measures

11.4.1 No changes are required to the information set out in Section 16.7: Mitigation in **Chapter 16 Air Quality (APP-067)** taking into account the Proposed Change.).

11.5 Residual Effects

11.5.1 No changes are required to the information set out in Section 16.8: Residual Effects in **Chapter 16 Air Quality (APP-067)** taking into account the Proposed Change.

Construction Phase Development Impacts

11.5.2 The implementation of effective mitigation measures during the construction phase, as detailed in Section 16.7: Mitigation in **Chapter 16 Air Quality (APP-067)** and in **Appendix 2.4 Outline CEMP (Revision 3) (REP2-017)** will substantially reduce the potential for nuisance dust and PM_{10} to be generated. Any residual impacts will be direct and temporary (lasting only for the anticipated 60-week construction period). The level of effect is concluded to be **Not Significant.**

11.5.3 As development-generated traffic associated with the Proposed Change is not expected to exceed the relevant criteria for detailed assessment under the IAQM/Environmental Protection United Kingdom (EPUK) guidance, the residual impact of the Proposed Change on human receptors during the construction phase is considered to be direct, temporary, short-term and the level of effect is concluded to be **Not Significant.**

Conclusion

11.5.4 The conclusions of **Chapter 16 Air Quality (APP-067)** in relation to construction phase residual impacts remains unchanged and **Not Significant**, when taking into account the Proposed Change.

Operation Phase Development Impacts

11.5.5 No additional vehicle movements are anticipated in respect of the Proposed Change during the operational phase and, as such, no additional air quality impacts are expected to those already set out in the Original ES.

Conclusion

11.5.6 The conclusions of **Chapter 16 Air Quality (APP-067)** in relation to operational phase residual impacts remains unchanged and **Not Significant**, when taking into account the Proposed Change**.**

Decommissioning Phase Development Impacts

11.5.7 As noted in paragraph 11.3.12, no decommissioning works are proposed, as the Bicker Fen Substation extension will remain in situ under control of NGET.

Conclusion

11.5.8 As noted in paragraph 11.3.13, no additional or different air quality effects are anticipated in respect of the Proposed Change as compared with the assessment undertaken for the Proposed Development in the Original ES.

11.6 Assessment of Cumulative Effects

Intra-cumulative Impacts

11.6.1 Regarding intra-cumulative effects, the online Multi-Agency Geographic Information for the Countryside (MAGIC) resource shows that there are no potentially sensitive designated habitat sites within sufficiently close proximity to the Proposed Change to be affected by construction dust, or which meet the IAQM and Natural England thresholds for development traffic impact. Therefore, from an air quality perspective, ecological effects do not need to be considered for either the construction or operational phase of the Proposed Development taking into account the Proposed Change. Aside from ecology, there are no other intra-cumulative effects on sensitive receptors associated with other environmental disciplines.

Inter-cumulative Impacts

11.6.2 Regarding inter-cumulative effects, traffic data has been reviewed in combination with other committed schemes such that the cumulative impact of the Proposed Change along with other developments (see **Appendix 4.2 Cumulative Assessment Short List (App-082)**) has been assessed. The effects are considered to be **Not Significant** due to the low level of traffic generation arising from the Proposed Development taking into account the Proposed Change.

11.6.3 There is potential for cumulative effects in relation to construction dust in the event that construction of the Proposed Change was to overlap with that of certain nearby developments; namely: Planning Application references EN010123; 14/1034/EIASCR; 17/1200/FUL; B/21/0121; B/21/0443; B/22/0198; B/22/0356 and B/17/0340. However, taking into account that the residual effect of construction dust from the Proposed Change is expected to be **Not Significant** and that those developments granted planning permission would have their own construction dust mitigation measures implemented via CEMPs, DMPs etc. to reduce residual effects to an anticipated Not Significant level, it is not expected that there would be a significant cumulative effect. Moreover, such effects (were they to occur) would only be temporary in nature, lasting only for the duration any period of overlap of construction works.

11.7 Summary

11.7.1 The baseline air quality in the vicinity of the Proposed Change is considered to be good. The Bicker Fen Substation site is not within, or in proximity to, any existing AQMA or area of known poor air quality, and the available air quality data from the nearest monitoring locations and the Defra Background Maps confirm that pollutant concentrations in the local area are well below the relevant objectives and target levels, even at roadside locations.

11.7.2 The qualitative assessment of construction dust impacts undertaken in **Chapter 16 Air Quality (APP-067)** has been updated to consider possible increased impacts arising from the Proposed Change, in line with the IAQM guidance. In relation to impacts of development-generated vehicle emissions, updated traffic data for the construction and operational phases of the Proposed Change has been reviewed against the appropriate IAQM guidance criteria, and this has confirmed that there is no requirement for detailed assessment.

11.7.3 During the construction phase, site-specific mitigation (including a best practice Dust Management Plan (DMP)) will be implemented at the Bicker Fen Substation Site, as detailed in **Appendix 2.4 Outline CEMP (Revision 3) (REP2-017)**. Preparation, approval and implementation of a detailed CEMP(s) prior to construction commencing is secured pursuant to Requirement 12 in Schedule 2 to the **Draft DCO (Document Ref: 3.1)**, as detailed in Section 16.7 of **Chapter 16 Air Quality (APP-067)**. No specific requirements for mitigation in the operational phase have been identified.

11.7.4 With appropriate site-specific construction dust mitigation in place, the residual effects on receptor locations are assessed as remaining **Not Significant** taking into account the Proposed Change. Review of traffic data for the construction and operational phases confirms that the relevant assessment thresholds will not be exceeded and, therefore, it is considered that the residual effect of construction and operational phase traffic generation on local air quality will remain **Not Significant**.

11.7.5 It has been determined that both intra-cumulative effects and inter-cumulative effects will remain **Not Significant**.

11.7.6 The Proposed Change does not alter the description of the baseline conditions in relation to air quality nor result in any new or different significant impacts compared to those reported in **Chapter 16 Air Quality (APP-067)**. There is, therefore, no change to the findings of the assessment of effects and of the cumulative effects reported within the Original ES, the overall effect remains **Not Significant.**

Table 11.3 – Summary Assessment Matrix

Issue*	Description of Impact	Geographical Significance							Significance of Effect	Nature	Significance	Mitigation Measures
		I	N	R	C	D	P	L				
Construction Phase												
Nuisance dust	Dust soiling							L	Not Significant (assuming embedded mitigation)	St, R	Not Significant	Appendix 2.4 Outline CEMP (Revision 3) (REP2-017)
Particulate Matter	Human health impacts of PM_{10}							L	Not Significant (assuming embedded mitigation)	St, R	Not Significant	Appendix 2.4 Outline CEMP (Revision 3) (REP2-017)
Road traffic emissions	Emissions of NO_2, PM_{10} and $PM_{2.5}$					D			Not Significant	St, R	Not Significant	None proposed
Operational Phase												
Road traffic emissions	Emissions of NO_2, PM_{10} and $PM_{2.5}$					D			Not Significant	Lt, R	Not Significant	None proposed
Decommissioning Phase												
Not applicable – no decommissioning activities proposed.												
Key: Geographical Significance: I = International N = National R = Regional C = County D = District P = Parish L = Low to Local Nature: St = Short Term Mt = Medium Term Lt = Long Term R = Reversible Ir = Irreversible												
* The impacts listed within this table are the same as those considered within the Original ES, with no new impacts identified in respect of the Proposed Change and no change to the findings within the Original ES.												

12. Summary

12.1 Introduction

12.1.1 This Chapter summarises the significant residual effects of the Proposed Change on the receptors considered within each technical assessment chapter (i.e. Chapters 4 to 11) of this Environmental Statement (ES) Addendum. Residual effects are defined as effects that remain following the implementation of mitigation measures (embedded and / or additional).

12.2 Mitigation Measures

12.2.1 Mitigation embedded into the design for the Proposed Development has been adopted (where possible) to reduce adverse environmental effects (see **Appendix 2.3 Embedded Mitigation (APP-076)**). Further to the embedded mitigation, each technical assessment chapter within the Original ES has considered the need for additional mitigation measures (where necessary) in respect of the Proposed Development (see **Chapter 19 Summary of Significant Environmental Effects (APP-070)**).

12.2.2 With regards to the Proposed Change, additional landscape and ecological enhancement measures have been proposed at the Bicker Fen Substation. These comprise the following:

- Areas of retained woodland to the north of the Bicker Fen Substation will continue to be retained, but additional woodland and scrub has been introduced to fill gaps (intended to provide stronger visual enclosure of the north-western boundary);
- Areas of woodland have been introduced to the south-east corner (where constraints allow); and
- A mosaic habitat of scrub and neutral grassland will be created, with existing woodland managed to enhance biodiversity and ecological value.

12.2.3 These measures are secured through **Appendix 6.7 Outline Landscape and Ecological Management Plan (Document Ref: 6.3.19)**, which has been updated to incorporate the above and is secured pursuant to Requirement 7 of Schedule 2 of the **Draft DCO (Document Ref: 3.1)**.

12.2.4 No further enhancement measures other than those described in this section are proposed.

12.3 Summary of Significant Residual Effects

12.3.1 The Original ES details the residual effects for the Proposed Development, including the extension works at the Bicker Fen Substation. This ES Addendum considers the residual effects as a result of the Proposed Change and identifies where these are different to those detailed within the Original ES. Detailed information regarding residual effects is presented within each technical chapter of this ES Addendum. As stated above, however, this chapters focuses only on those that are considered ‘significant’ (in EIA terms).

12.3.2 The criteria applied to define the significance of residual effects are outlined in **Chapter 4: Scope and Methodology (APP-055)** of the Original ES. Where there are any deviations from this methodology relevant to specific technical assessment chapters (e.g. to meet industry standards or to take account of specific assessment guidance), this has been explained within relevant chapter(s) of this ES Addendum.

12.3.3 The residual effects listed within the technical assessment chapters of this ES Addendum are described with reference to the scale of effect and whether this is 'Significant' or 'Not Significant', and the nature of the effect (adverse, negligible or beneficial). Residual effects assigned the rating major or moderate are generally considered as significant and are discussed in this chapter.

12.3.4 As per the summary tables included within each of the assessment chapters of this ES Addendum (i.e. Chapters 4 to 11), there are no new or different likely significant residual effects which have been identified as a result of the Proposed Change, which is unchanged as compared to the assessment of the Proposed Development without the Proposed Change.

12.4 Summary of Cumulative Effects

Intra-cumulative

12.4.1 **Chapter 18 Cumulative Effects (APP-069)** reports on potential intra-cumulative effects as a result of the Proposed Development. In respect of the Proposed Change, no new or different intra-cumulative effects are anticipated as a result of the Proposed Change, which is unchanged as compared to the assessment of the Proposed Development without the Proposed Change.,

Inter-cumulative

12.4.2 **Chapter 18 Cumulative Effects (APP-069) reports** on potential inter-cumulative effects as a result of the Proposed Development. In respect of the Proposed Change, no new or different intra-cumulative effects are anticipated as a result of the Proposed Change, which is unchanged as compared to the assessment of the Proposed Development without the Proposed Change.

12.5 Conclusion

12.5.1 The Original ES details the residual effects for the Proposed Development, including the extension works at the Bicker Fen Substation and this ES Addendum considers the residual effects as a result of the Proposed Change. Overall, there are no changes to the significant effects reported within the Original ES as a result of the Proposed Change.