
**THREE OAKS RENEWABLE
ENERGY PARK
EXTENSION**

**Environmental
Statement Chapter 11: Summary of Significant
Findings and In-combination Effects**

MAY 2026



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11 **Summary of Significant Findings and In-combination Effects**

Introduction

- 11.1 This chapter summarises the findings of the Environmental Impact Assessment (EIA) that are significant in EIA terms. It separately then considers the potential for in-combination effects arising from the Three Oaks Renewable Energy Park Extension (hereafter referred to as the 'Proposed Development').
- 11.2 Initial assessments reported in this Environmental Statement (ES) take Primary and Tertiary mitigation into account, such as design matters embedded into the scheme (Primary) and standard pollution control measures (Tertiary). The assessment of residual effects from the Proposed Development considers the influence of Secondary mitigation measures (measures which require further work to be undertaken to secure, such as the discharging of planning conditions).
- 11.3 The first half of this chapter identifies where initial effects are reported as significant, but then residually not significant following the application of Secondary mitigation, or where a residual effect remains significant in EIA terms.
- 11.4 The second half of this chapter considers the potential for in-combination effects. That is, where more than one perceptible residual environmental effect occurs at an individual receptor. These are then assessed as to whether the combination of multiple perceptible effects is significant in EIA terms. For the purposes of this assessment, the interactions between different environmental effects associated with the Proposed Development are defined as 'in-combination' effects.
- 11.5 The two halves of this chapter do not relate to, nor inform the other as the second half considers perceptible effects as reported within ES chapters rather than just significant effects.
- 11.6 It is considered that this Chapter addresses the requirements of Regulation 4 (2)(e) of the EIA Regulations.

Summary of Significant Findings

- 11.7 Chapters 5 – 10 (Volume 2) present the detailed assessment of effects relating to the following topics:
- Chapter 5 – Landscape and Visual Impact
 - Chapter 6 – Historic Environment
 - Chapter 7 – Biodiversity
 - Chapter 8 – Traffic and Transport
 - Chapter 9 – Noise and Vibration
 - Chapter 10 – Other Considerations (specifically Shadow Flicker).

- 11.8 Tables 11.1 – 11.3 below identify the effects within chapters 5 – 10 of the ES which are reported as significant but then residually not significant following the application of Secondary mitigation, or where a residual effect remains significant in EIA terms across construction, operation and decommissioning.

Chapter 11 – Summary of Significant Findings and In-Combination Effects

Table 11.1 – Summary of Findings of Significance – Construction

Chapter	Impact	Receptor	Initial Effect	Significant in EIA terms?	Residual Effect	Significant in EIA terms?
5 – LVIA	Visibility of construction works	LCA 13D – Development Site and immediate surrounding area.	Moderate +	Yes	Moderate +	Yes
5 – LVIA	Visibility of construction works	Yorkshire Wolds ILA (from Woldgate to the north of the Site to the A614 to the south of the Site and from Rudston Road to the west of the Site to Church Lane to the east of the Site).	Moderate +	Yes	Moderate +	Yes
5 – LVIA	Visibility of construction works	Home Farm - Haisthorpe.	Major / moderate	Yes	Major / moderate	Yes
5 – LVIA	Visibility of construction works	Visitors to one location of Hockney Trail.	Major / moderate	Yes	Major / moderate	Yes
5 – LVIA	Visibility of construction works	Users of 5 local Public Rights of Ways (PRoW) (other routes with public access) that run down the Wold slope on and around the Site, from Woldgate down to the A614 and between Rudston Lane to the west and Church Lane to the east.	Major / moderate to Moderate +	Yes	Major / moderate to Moderate +	Yes

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Chapter	Impact	Receptor	Initial Effect	Significant in EIA terms?	Residual Effect	Significant in EIA terms?
5 – LVIA	Visibility of construction works	Short sections of NCN Route 1 and 4 long distance routes (no significant effect on remainder of the routes) (Beverley Minster to Bridlington Priory, Blackpool to Bridlington (Aerospace Way), East Riding Heritage Way and Way of the Roses).	Major / moderate to Moderate +	Yes	Major / moderate to Moderate +	Yes
6 – Historic Environment	Direct impact from construction works	Prehistoric finds.	Moderate adverse	Yes	Slight	No
6 – Historic Environment	Direct impact from construction works	Settlement site.	Moderate adverse	Yes	Slight	No
6 – Historic Environment	Direct impact from construction works	Trackways / enclosures.	Moderate adverse	Yes	Slight	No
6 – Historic Environment	Direct impact from construction works	Settlement complex.	Moderate adverse	Yes	Slight	No
6 – Historic Environment	Direct impact from construction works	Linear earthwork.	Moderate adverse	Yes	Slight	No
6 – Historic Environment	Direct impact from construction works	Curvilinear bank.	Moderate adverse	Yes	Slight	No
6 – Historic Environment	Direct impact from construction works	Enclosures, tracks, pits identified by geophysical survey.	Moderate adverse	Yes	Slight	No
6 – Historic Environment	Direct impact from construction works	Palaeochannel / drainage features.	Moderate adverse	Yes	Slight	No

Chapter 11 – Summary of Significant Findings and In-Combination Effects

Chapter	Impact	Receptor	Initial Effect	Significant in EIA terms?	Residual Effect	Significant in EIA terms?
7 – Biodiversity	Construction / Decommissioning disturbance	Badgers.	Major / moderate	Yes	Minor / negligible	No
7 – Biodiversity	Construction / Decommissioning disturbance	Quail.	Major / moderate	Yes	Minor / negligible	No
7 – Biodiversity	Construction / Decommissioning disturbance	Barn Owl.	Major / moderate	Yes	Minor / negligible	No

Table 11.2 – Summary of Findings of Significance – Operation

Chapter	Impact	Receptor	Initial Effect	Significant in EIA terms?	Residual Effect	Significant in EIA terms?
5 – LVIA	Visibility of Proposed Development	LCA 13D – Development site and surrounding area extending 2 km east of T3, 0.4 km north of T1-3, 1.2 km south of T4-6 and 5 km north-west and west of the Site.	Moderate + to Major / moderate +	Yes	Moderate + to Major / moderate +	Yes
5 – LVIA	Visibility of Proposed Development	LCA 19C (3 km south of the Site, excluding Carnaby Industrial Estate).	Moderate +	Yes	Moderate +	Yes
5 – LVIA	Visibility of Proposed Development	Yorkshire Wolds ILA (2 km east of T3, 0.4 km north of T1-3, 1.2 km south of T4-6 and 5 km north-west and west of the Site).	Moderate + to Major / moderate +	Yes	Moderate + to Major / moderate +	Yes

Chapter 11 – Summary of Significant Findings and In-Combination Effects

Chapter	Impact	Receptor	Initial Effect	Significant in EIA terms?	Residual Effect	Significant in EIA terms?
5 – LVIA	Visibility of Proposed Development	Home Farm – Haisthorpe.	Major	Yes	Major	Yes
5 – LVIA	Visibility of Proposed Development	Eastern and western properties in Thornholme.	Major / moderate+	Yes	Major / moderate+	Yes
5 – LVIA	Visibility of Proposed Development	Burton Agnes Hall (Views from Eastern Façade).	Major / moderate	Yes	Major / moderate	Yes
5 – LVIA	Visibility of Proposed Development	Properties in Rudston with clear view of skyline to the south.	Major / moderate	Yes	Major / moderate	Yes
5 – LVIA	Visibility of Proposed Development	Western End of Carnaby.	Moderate+	Yes	Moderate+	Yes
5 – LVIA	Visibility of Proposed Development	Visitors to one location of Hockney Trail.	Major	Yes	Major	Yes
5 – LVIA	Visibility of Proposed Development	Burton Agnes Hall (Views from Eastern Façade).	Major / moderate	Yes	Major / moderate	Yes
5 – LVIA	Visibility of Proposed Development	All Saints Church and the Monolith in Rudston.	Major / moderate	Yes	Major / moderate	Yes
5 – LVIA	Visibility of Proposed Development	Users of 5 local PRowS (other routes with public access) that run down the Wold slope on and around the Site, from Woldgate down to the A614 and between Rudston Lane to the	Major to Major +	Yes	Major to Major +	Yes

Chapter 11 – Summary of Significant Findings and In-Combination Effects

Chapter	Impact	Receptor	Initial Effect	Significant in EIA terms?	Residual Effect	Significant in EIA terms?
		west and Church Lane to the east.				
5 – LVIA	Visibility of Proposed Development	Short sections of NCN Route 1 and 4 long distance routes (no significant effect on remainder of the routes) (Beverley Minster to Bridlington Priory, Blackpool to Bridlington (Aerospace Way), East Riding Heritage Way and Way of the Roses).	Major to Major +	Yes	Major to Major +	Yes
10 – Shadow Flicker	Shadow Flicker impacts	Property 1 – Located in Haisthorpe.	Theoretical impact above acceptable thresholds	Yes	Impact at or below acceptable thresholds	No
10 – Shadow Flicker	Shadow Flicker impacts	Property 2 – Located in Haisthorpe.	Theoretical impact above acceptable thresholds	Yes	Impact at or below acceptable thresholds	No
10 – Shadow Flicker	Shadow Flicker impacts	Property 4 – Located in Haisthorpe.	Theoretical impact above acceptable thresholds	Yes	Impact at or below acceptable thresholds	No
10 – Shadow Flicker	Shadow Flicker impacts	Property 5 – Located in Haisthorpe.	Theoretical impact above acceptable thresholds	Yes	Impact at or below acceptable thresholds	No

Chapter 11 – Summary of Significant Findings and In-Combination Effects

Table 11.3 – Summary of Findings – Decommissioning

Chapter	Impact	Receptor	Initial Effect	Significant in EIA terms?	Residual Effect	Significant in EIA terms?
5 – LVIA	Decommissioning works	Users of 5 local PRowWs (other routes with public access) that run down the Wold slope on and around the Site, from Woldgate down to the A614 and between Rudston Lane to the west and Church Lane to the east.	Moderate + to Major / moderate	Yes	Moderate + to Major / moderate	Yes
5 – LVIA	Decommissioning works	Short sections of NCN Route 1 and 4 long distance routes (no significant effect on remainder of the routes) (Beverley Minster to Bridlington Priory, Blackpool to Bridlington (Aerospace Way), East Riding Heritage Way and Way of the Roses).	Moderate + to Major / moderate	Yes	Moderate + to Major / moderate	Yes

Chapter 11 – Summary of Significant Findings and In-Combination Effects

Chapter	Impact	Receptor	Initial Effect	Significant in EIA terms?	Residual Effect	Significant in EIA terms?
5 – LVIA	Decommissioning works	Home Farm – Haisthorpe.	Moderate+	Yes	Moderate+	Yes
7 – Biodiversity	Construction / Decommissioning disturbance	Badgers.	Major moderate	Yes	Minor / negligible	No
7 – Biodiversity	Construction / Decommissioning disturbance	Quail.	Major moderate	Yes	Minor / negligible	No
7 – Biodiversity	Construction / Decommissioning disturbance	Barn Owl.	Major moderate	Yes	Minor / negligible	No

In-Combination Assessment

Methodology

- 11.9 The methodology for assessing in-combination effects involves identification of impact interactions associated with the construction, operation and decommissioning phases of the Proposed Development upon receptors. There is no established, robust methodology for quantitatively assessing complex cross topic inter-related effects and assigning a level of significance to them, as methodologies and criteria vary across environmental topics. In the absence of an established methodology, this assessment has been undertaken using a qualitative appraisal process and professional judgement.
- 11.10 A single receptor receiving multiple residual effects which are individually above the level of perceptibility (i.e. equivalent to Minor / Lowest Observed Adverse Effect Level (LOAEL) or above), could receive a new significant in-combination effect due to the interaction of two or more of these perceptible effects. It is noted that for some environmental topics, significance criteria differ depending on the topic assessment. An impact is not included in the assessment below where it falls below the level of perceptibility (i.e. a magnitude of negligible or below), nor if it is not considered to occur simultaneously with another impact to that specific receptor.
- 11.11 It is noted that impacts to ecological receptors through 'disturbance', as reported in Chapter 7 (Biodiversity) – Volume 2 already account for differing impacts upon an individual ecological receptor and thus is not repeated in this chapter.

Stage 1

- 11.12 The first stage of the assessment was to undertake a review of the residual effects (i.e. those effects remaining following the application of primary, tertiary and secondary mitigation) identified in chapters 5 – 10 of this ES, which were assessed as being above the level of perceptibility.

Stage 2

- 11.13 Consideration was given to where a receptor received two or more perceptible effects. For the combination of perceptible effects to occur, a single receptor must be able to perceive separate effects occurring at the same time (such as the visibility and audibility of construction works). Sequential effects (such as the visual impact of construction, and the visual impact of operation) do not occur at the same time and thus cannot be considered as in-combination effects.

Stage 3

- 11.14 A qualitative assessment was then undertaken to consider whether a new significant in-combination effect arose as a result of the identified impacts occurring together.

Overview

- 11.15 Table 11.4 below provides an overview of where multiple impacts to a common receptor is anticipated to occur.

Table 11.4 – Overview of possible in-combination effects

Receptor	Chapter 5 – LVIA	Chapter 6 – Historic Environment	Chapter 7 – Biodiversity	Chapter 8 – Traffic and Transport	Chapter 9 – Noise and Vibration	Chapter 10 – Other consideration
Construction & Decommissioning						
Properties in Thornholme	✓				✓	
Motorists on the A614	✓			✓		
Operation						
Properties in Haisthorpe	✓				✓	✓ (Shadow Flicker)
Properties in Thornholme	✓				✓	

Assessment

Construction

- 11.16 This review has identified two receptors which could receive more than one simultaneous perceptible impact that could result in in-combination construction effects:
- Properties in Thornholme could be affected by visual and noise impacts during the construction phase (Table 11.5); and
 - Motorists on the A614 could be affected by visual impact and driver delay (Table 11.6).
- 11.17 Each section below identifies the different impacts that could be experienced, and the justification as to whether, when combined, they would result in a new significant in-combination effect.

Properties in Thornholme

- 11.18 A review of this ES has identified that there are properties in Thornholme which could receive simultaneous visual and noise impacts from the construction of the Proposed Development (specifically the upgraded junction with the A614).

Table 11.5 – Properties in Thornholme – Construction

Discipline	Impact	Residual Effect	EIA Significance
Landscape and Visual Impact	Temporary visual impact of construction	Moderate / minor	No
Noise and Vibration	Temporary acoustic impact of construction of junction upgrade with A614	The Lowest Observed Adverse Effect Level (LOAEL) threshold is breached by 2 decibels (dB) (with 8 dB of headroom before the SOAEL threshold is met)	No

- 11.19 Individually, these impacts were not identified as significant, however this assessment considers the combined effect of these impacts. Owing to the temporary nature of the impact and that the construction noise only just breaches the LOAEL threshold by 2 dB (with an 8 dB headroom before the SOAEL threshold is met) (see Table 9.9 in Chapter 9 (Noise and Vibration) – Volume 2), it is not considered that the combined effects to properties in Thornholme would result in a new significant in-combination effect.

Motorists on the A614

- 11.20 A review of this ES has identified that motorists on the A614 could receive both visual and driver delay impacts during construction.

Table 11.6 – Motorists on A614 – Construction

Discipline	Impact	Residual Effect	EIA Significance
Landscape and Visual Impact	Visual impact	Moderate	No
Traffic and Transport	Driver Delay	Minor	No

- 11.21 Individually, these impacts were not identified as significant, however this assessment considers the combined effect of these impacts. Owing to the temporary nature of the impact (approximately 2 to 3 weeks during construction of the upgraded junction at the A614) and that the focus of a driver will be on the road rather than on construction activities, it is not considered that the combined effects to road users on the A614 would result in a new significant in-combination effect.

Operation

- 11.22 This review has identified two receptors which could receive more than one perceptible effect that could result in in-combination operational effects:
- Properties in Haisthorpe could be affected by visual impact, shadow flicker and noise (Table 11.7); and
 - Properties in Thornholme could be affected by visual impact and noise (Table 11.8).

Properties in Haisthorpe

- 11.23 A review of this ES has identified that there are properties in Haisthorpe which could receive simultaneous visual, shadow flicker and noise impacts from operation of the Proposed Development.
- 11.24 Chapter 9 (Noise and Vibration) – Volume 2 adopts the ETSR-R-97 guidance for the assessment of operational impacts from wind turbines. It provides a 'pass / fail' test whereby meeting the noise limits will be regarded as Not Significant (below the Significant Observed Adverse Effect Level, SOAEL) and an exceedance of these given as a Significant effect. However, this in-combination assessment considers *perceptible* effects and thus must consider two entities. Firstly, where operational noise impacts occur above the LOAEL (which Chapter 9 identifies as 35 dB (i.e., impacts below this are not to be considered)), and secondly where such impacts are above the level of background noise.
- 11.25 To achieve this, the results of Table 9.14 (Haisthorpe Hall) in Chapter 9 is used. Where the levels exceed 35dB and exceed either the daytime or night time background noise levels, it is considered as being an audible and perceptible impact, and is then included within this assessment of in-combination effects and explained further in Table 11.7 below.

Table 11.7 – Properties in Haisthorpe – Operation

Discipline	Impact	Residual Effect	EIA Significance
Landscape and Visual Impact	Visibility of the Proposed Development	Major	Yes
Shadow Flicker	Potential shadow flicker impact (at or below acceptable standards)	Impact 'at or below acceptable thresholds'	No
Noise	Audibility of operational wind turbines	Audible impacts at the LOAEL (but not the SOAEL) during daytime wind speeds of 5, 6 or 7 m/s.	No

- 11.26 The residual shadow flicker impacts would be based on specific climatic conditions and are low (at or below acceptable standards). The exceedance of audibility above background noise levels (at only three specific daytime wind speeds) is very small (1.7, 3.2 and 2.3 dB respectively, with 3dB being a recognised minimum level of perceptible change). It is not considered that the addition of these impacts to those of visual impact would result in a significant in-combination effect to properties in Haisthorpe.

Properties in Thornholme

- 11.27 A review of this ES has identified that there are properties in Thornholme which could receive simultaneous visual and noise impacts from operation of the Proposed Development. The same methodology for identifying audible and perceptible effects at Haisthorpe has been applied here (using Table 9.15 in Chapter 9).

Table 11.8 – Properties in Thornholme – Operation

Discipline	Impact	Residual Effect	EIA Significance
Landscape and Visual Impact	Visibility of the Proposed Development	Major / moderate+	Yes
Noise	Audibility of operational wind turbines	Audible impacts at the LOAEL (but not the SOAEL) during daytime wind speed of 7 m/s.	No

- 11.28 The exceedance of audibility above background noise levels (at only one specific daytime wind speed) is very small (1.5 dB). It is not considered that the addition of this impact to the identified visual impact would result in a significant in-combination effect to properties in Thornholme.

Decommissioning

- 11.29 Impacts would be similar between construction and decommissioning, thus the assessment of construction related impacts is applicable here, resulting in no new significant in-combination effects from decommissioning.

Summary

- 11.30 This Chapter summarises the significant findings of the ES and separately, where multiple perceptible residual effects occur to an individual receptor, whether such an in-combination effect is significant.
- 11.31 Following consideration, it is considered that no new significant in-combination effects are anticipated.