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# **EAST YORKSHIRE SOLAR FARM**

**East Yorkshire Solar Farm  
EN010143**

## **Environmental Statement**

**Volume 1, Chapter 17: Cumulative Effects and Interactions  
Document Reference: EN010143/APP/6.1**

Regulation 5(2)(a)  
Infrastructure Planning (Applications: Prescribed Forms and Procedure)  
Regulations 2009

November 2023  
Revision Number: 00

2009

BOOM-POWER.CO.UK

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## 17. Cumulative Effects and Interactions

### 17.1 Introduction

- 17.1.1 This chapter addresses the potential for effect interactions and cumulative effects for the Scheme (as described in **Chapter 2: The Scheme, Environmental Statement (ES) Volume 1 [EN010143/APP/6.1]**).
- 17.1.2 For this assessment, two types of effect are considered:
- a. **Effect Interactions** – the combined effect of individual impacts from the Scheme, which have been identified as part of the assessments reported within **Chapters 6 to 16, ES, Volume 1 [EN010143/APP/6.1]**, that are considered likely to result in a new or different likely significant effect, or an effect of greater significance, than any one of the impacts on their own. For example, this can happen during construction if a receptor is subjected to noise, dust, and visual impacts associated with site works; and
  - b. **Cumulative Effects** – where there is the potential for two or more developments that are reasonably foreseeable and / or consented, but not yet forming part of the baseline environment, within close enough proximity to the Scheme to lead to significant cumulative environmental effects on the same receptor. **Chapters 6 to 16, ES Volume 1 [EN010143/APP/6.1]** assess where there are cumulative effects, and a summary is provided in this chapter. A detailed description of the assessment methodology for cumulative effects is presented in **Chapter 5: Environmental Impact Assessment Methodology, ES Volume 1 [EN010143/APP/6.1]**.

### 17.2 Consultation

- 17.2.1 A request for an EIA Scoping Opinion was sought from the Secretary of State through the Planning Inspectorate (PINS) in 2022 as part of the EIA Scoping process. Consultation responses in relation to Cumulative Effects and Interactions, to date, are presented in **Appendix 1-2, ES Volume 2 [EN010143/APP/6.2]**.
- 17.2.2 A list of cumulative developments was prepared and shared with East Riding of Yorkshire Council and North Yorkshire Council for agreement in preparing this ES.

### 17.3 Legislative and Policy Context

- 17.3.1 Regulation 5(2) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (Ref. 17-1) (EIA Regulations) makes explicit reference to the requirement for an assessment of the effect interactions between types of effect, and states that: *“The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors— ... (e) the interaction between the factors referred to in sub-paragraphs (a) to (d).”*

- 17.3.2 No further guidance or requirement beyond the need for an assessment of the interrelationships between types of effect is provided.
- 17.3.3 In terms of cumulative effects, Schedule 4 paragraph 5 of the EIA Regulations(Ref. 17-1) requires an Environmental Statement (ES) to include: *“A description of the likely significant effects of the development on the environment resulting from, inter alia— ... (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources ... The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.”*
- 17.3.4 National Policy Statement (NPS) EN-1: Overarching National Policy Statement for Energy (Ref. 17-2) paragraph 4.2.5 states: *“When considering cumulative effects, the ES should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence).”* In terms of decision making when weighing adverse impacts up against benefits consideration will be given to the potential adverse impacts including any long-term cumulative impacts as set out in paragraph 4.1.3 of NPS EN-1. Paragraph 4.2.6 continues that consideration will be given to the interrelationship and accumulation of effects even though they may be acceptable when considered on an individual basis.
- 17.3.5 The requirement to consider cumulative effects is also addressed under each of the topic headings within Section 5 of Draft NPS EN-1: Overarching National Policy Statement for Energy (Ref. 17-3). Paragraph 4.2.3 of draft NPS EN-1 explains the EIA Regulations *“require an assessment of the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, transboundary, short, medium, and long-term, permanent and temporary, positive and negative effects at all stages of the project, and also of the measures envisaged for avoiding or mitigating significant adverse effects”*. This paragraph includes footnote 97 which refers to guidance on the assessment of cumulative effects being provided in PINS Advice Note 17 Cumulative Effects Assessment (August 2019) (Ref. 17-4).
- 17.3.6 Draft National Policy Statement EN-3 for Renewable Energy (Ref. 17-5) paragraph 3.10.132 states that *“Where cumulative effects on the local road network or residential amenity are predicted from multiple solar farm developments, it may be appropriate for applicants for various projects to work together to ensure that the number of abnormal loads and deliveries are minimised, and the timings of deliveries are managed and coordinated to ensure that disruption to residents and other highway users is reasonably minimised.”*
- 17.3.7 In terms of Local Policy, Policy EC5 (Supporting the Energy Sector) of the East Riding Local Plan (2016) (Ref. 17-6) and Policy EC5 (Policy EC5: Supporting the renewable and low carbon energy sector) of the East Riding Local Plan Update 2020–2039 (Ref. 17-7) state that *“Developments and*

*their associated infrastructure should be acceptable in terms of the cumulative impact of the proposal with other existing and proposed energy sector developments”.*

- 17.3.8 Policy SG10 (Low Carbon and Renewable Energy (Strategic Policy) of the Selby District Council Local Plan Publication Version (2022) (Ref. 17-8) states that *“Proposals for low carbon and renewable energy storage and generation will be supported where planning impacts of the development and associated infrastructure, both individually and cumulatively, are, or can be made, acceptable”.*

## 17.4 Assessment Methodology

### Effect Interactions

- 17.4.1 The assessment of effect interactions is based on the methodology described in **Chapter 5: Environmental Impact Assessment Methodology, ES Volume 1 [EN010143/APP/6.1]** and considers the potential for several direct or indirect effects arising from the Scheme to give rise to an effect on a single receptor. There are no specific, relevant guidelines on how the assessment of effect interactions should be undertaken, and so the assessment has been undertaken on a qualitative basis using the results of the individual assessments, relying on professional judgement.

### Cumulative Effects

- 17.4.2 The cumulative effects assessment is based on the methodology described in **Chapter 5: Environmental Impact Assessment Methodology, ES Volume 1 [EN010143/APP/6.1]**. This has been developed in accordance with PINS Advice Note 17 (Ref. 17-4) on the assessment of cumulative effects. A four-stage approach has been adopted for this assessment, as follows:
- a. Stage 1 – establish the study area and identify a long list of ‘other development’;
  - b. Stage 2 – identify a shortlist of ‘other development’ for the cumulative impact assessment;
  - c. Stage 3 – information gathering; and
  - d. Stage 4 – assessment.

## 17.5 Assessment

### Effect Interactions

- 17.5.1 The interaction of two or more predicted environmental effects resulting from the Scheme may collectively cause a greater (or lesser) effect than each effect in isolation. The potential for effect interactions is assessed within this section.
- 17.5.2 **Table 17-1** below summarises the potential effect interactions during construction and decommissioning (which are assumed to have the same impacts). **Table 17-2** summarises the potential effect interactions during

operation. Effects of negligible significance have not been considered in the assessment, as by their nature it is not considered likely that they would have the potential to interact with other impacts to cause an effect interaction.

**Table 17-1. Potential effect interactions during construction and decommissioning**

Receptor	Description of Impact	Effect Interaction	Additional mitigation proposed
Road users, residential properties, business premises, community facilities and development land affected by landscape and visual effects coupled with traffic, and noise impacts	These receptors are predicted to experience minor to moderate adverse effects from changes in the landscape and visual amenity, coupled with negligible to moderate adverse effects associated with traffic severance, driver delay and road safety, and minor adverse effects from noise. Impacts from traffic and noise are generally negligible or minor, except at a few discrete locations where a significant increase in vehicle numbers is anticipated, and night-time Horizontal Directional Drilling (HDD) activities may cause a temporary significant effect on noise.	No significant effect interactions: There is potential for increased annoyance due to increased impacts, where receptors experience multiple impacts such as from visual changes and noise, but the impacts are temporary and reversible following completion of construction and decommissioning. Users of Public Rights of Way (PRoW) may also be subject to landscape and visual effects, although the impacts are temporary, and any diversions will be relatively minimal. Overall, it is not expected that the effects would interact to create any new significant effects. The effect interactions would be slightly lower during decommissioning than construction due to the matured vegetation screening views of the Scheme.	No additional mitigation is proposed.



Receptor	Description of Impact	Effect Interaction	Additional mitigation proposed
Heritage receptors experiencing impacts from views and noise	The setting of heritage receptors can be affected by changes in the views and tranquillity.	No significant effect interactions: It is not expected that any heritage assets will be significantly affected by noise emissions during construction. Where noise does occur at heritage assets, it will be short term, temporary, and during the daytime, and reversible on completion of the construction phase. It is therefore not expected to interact with the change in views and setting at any heritage assets.	No additional mitigation is proposed.

**Table 17-2. Potential effect interactions during operation**

Receptor	Description of Impact	Effect Interaction	Additional mitigation proposed
Local community affected by changes in landscape and visual amenity, coupled with socio-economics effects	These receptors are predicted to experience minor to moderate adverse effects due to changes in the composition of the view during Year 1 of operation, moderate adverse effect on the West of Holme on Spalding Moor Farmland LCA 5B during Operation Year 1, and moderate adverse effect on the Howden to Bubwith LCA 5A during Operation Year 1 and Year 15, as outlined in <b>Chapter 10: Landscape and Visual Amenity, ES Volume 1 [EN010143/APP/6.1]</b> .	No significant effect interactions: Users of the Permissive Paths may be more subjected to the landscape and visual effects of the Scheme, but they will also benefit from access that was previously not available and which has beneficial transport and health implications. It is considered that the impacts in isolation are not altered when considered together.	No additional mitigation is proposed.

Receptor	Description of Impact	Effect Interaction	Additional mitigation proposed
	<p>This would be coupled with minor beneficial effects to socio-economics and health due to the addition of Permissive Paths, as outlined in <b>Chapter 12: Socio-Economics and Land Use, ES Volume 1 [EN010143/APP/6.1]</b>.</p>		

## Cumulative Effects

- 17.5.3 The assessment of cumulative effects arising from the Scheme in combination with other proposed schemes (inter-project effects) is based upon a review of current submitted planning and DCO applications as well as a study of planning policy documents.
- 17.5.4 The cumulative assessment is focussed on assessing the impact of the developments which have the potential to generate significant cumulative effects. As discussed in paragraph 17.2.2, a long list and short list of cumulative developments has been prepared and has been shared with East Riding of Yorkshire Council and North Yorkshire Council. The shortlist is provided in **Appendix 17-1, ES Volume 2 [EN010143/APP/6.2]** is illustrated as a map in **Figure 17-3, ES Volume 3 [EN010143/APP/6.3]**.

## Study Area

- 17.5.5 **Table 17-3** sets out the Zone of Influence (Zol) for potential cumulative impacts with other developments and has been defined by each environmental topic. **Figures 17-1 and 17-2, ES Volume 3 [EN010143/APP/6.3]** illustrate the Zol for each environmental topic for the construction and operational stages. It is assumed that the Zol for decommissioning will be the same as for construction.

**Table 17-3. Zol Extents for assessment of potential cumulative impacts**

<b>Environmental topic</b>	<b>Zone of Influence (Zol)</b>
Climate Change	The global climate
Cultural Heritage	Up to 5 km from the Order limits
Ecology	Up to 5 km from the Order limits
Water Environment	Up to 1 km from the Order limits Up to 2 km from the Order limits if developments are immediately adjacent to watercourses that could be impacted
Landscape and Visual Amenity	Up to 5 km from the Solar PV Areas and up to 1 km from the Grid Connection Corridor
Noise and Vibration	Up to 300 m from the Order limits during construction Up to 500 m from the Order limits during operation
Socio-economics	Up to 2 km from the Order limits
Transport and Access	No further than traffic counts obtained as shown on <b>Figure 13-2, ES Volume 3 [EN010143/APP/6.3]</b>
Human Health	As per the topics which contribute to the health assessment
Soils and Agricultural Land	Soils – No further than the Order limits Agricultural Land – Up to 5 km from the Order limits

## Environmental topic Zone of Influence (Zoi)

Glint and Glare	1 km for other solar schemes
Air Quality	350 m for dust and emissions during construction The affected road network as shown on <b>Figure 13-2, ES Volume 3 [EN010143/APP/6.3]</b>

17.5.6 **Appendix 17-1, ES Volume 2 [EN010143/APP/6.1]** sets out the developments which have been identified within the short list. This includes the following cumulative developments which overlap with the Order limits:

- a. Scotland to England Green Link 2 – see ID 2 and 3 on in **Appendix 17-1, ES Volume 2 [EN010143/APP/6.1]**;
- b. Helios Renewable Energy Project – see ID 1 in **Appendix 17-1, ES Volume 2 [EN010143/APP/6.1]**;
- c. Drax Bioenergy with Carbon Capture and Storage Project – see ID 4 in **Appendix 17-1, ES Volume 2 [EN010143/APP/6.1]**;
- d. Humber Low Carbon Pipelines Project – see ID 5 in **Appendix 17-1, ES Volume 2 [EN010143/APP/6.1]**;
- e. Drax Re-power – see ID 6 in **Appendix 17-1, ES Volume 2 [EN010143/APP/6.1]**; and
- f. Lakeside Energy Storage Project – see ID 26 and 27 in **Appendix 17-1, ES Volume 2 [EN010143/APP/6.1]**.

17.5.7 As discussed in **Chapter 2: The Scheme, ES Volume 1 [EN010143/APP/6.1]**, the Scheme will need to connect to the national electricity transmission network at the National Grid Drax Substation where connection works will be installed by National Grid within an existing spare bay. It is not proposed that the DCO will seek consent for these works, and it is currently assumed National Grid will install this transformer under a separate consent, if consent is deemed to be required. The timing of the works to install the transformer may coincide with the timing of the cable laying in the Grid Connection Corridor and therefore its potential for cumulative effects along with the Scheme has also been considered, where relevant and as far as practical based on the information currently in the public domain.

17.5.8 An assessment of the cumulative effects of the Scheme along with these other developments is presented in subsection 10 of each technical chapter (**Chapters 6 to 15**) and throughout Chapter 16 Other Issues of the **ES Volume 1 [EN010143/APP/6.1]**. Within most technical chapters no likely significant effects have been identified through the cumulative effects assessment where they were not already predicted for the Scheme in isolation. Nor are any significant effects associated with the Scheme made greater (e.g., Moderate to Major) when considering these other developments alongside the Scheme. It is therefore considered that there will not be any new likely significant effects associated with cumulative effects that are not already accounted for by the assessment of the Scheme. An exception is the functional improvement of soil resources that would follow conversion of arable to grassland when considered with the

other solar farm proposals in North Yorkshire. Whilst a conservative approach has been presented in **Chapter 15: Soils and Agricultural Land, ES Volume 1 [EN010143/APP/6.1]** for the improved functionality of soils following arable to grassland conversion, which was assigned a Slight beneficial effect, this benefit has been emphasised within other projects and allocated a significant beneficial effect. Consequently, the cumulative effect on improved functionality of soils is **moderate beneficial and significant**.

- 17.5.9 A full description of cumulative effects is presented in the technical chapters, as mentioned above.

## 17.6 References

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