



# Meridian Solar Farm

EN010169

Volume 6

Environmental Statement

6.1 ES Chapter 17: Effect  
Interactions

APFP Regulation 5(2)(a)

Infrastructure Planning (Applications:  
Prescribed Forms and Procedure)  
Regulations 2009

March 2026

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## 17. Effect Interactions

### 17.1. Introduction

17.1.1. As outlined within **ES Chapter 4: Overview of the EIA Process** (Doc Ref. 6.1) and in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations)<sup>1</sup>, two types of cumulative effects are assessed and reported as part of this ES:

- **Intra-project cumulative effects:** also referred to as 'effect interactions'; these comprise the combined effects of individual impacts from the Scheme which have been identified as part of the assessments reported within **ES Chapter 5 to ES Chapter 16** (Doc Ref. 6.1). Intra-project cumulative effects may 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
- **Inter-project 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, and within close enough proximity to the Scheme, to lead to significant cumulative environmental effects on the same receptor. Each ES Chapter (**ES Chapter 5 to ES Chapter 16** (Doc Ref. 6.1)) provides an assessment of inter-project cumulative effects as a result of the Scheme and other projects.

17.1.2. This chapter sets out the relevant legislation, policy and guidance, consultation, assessment methodology, and assessment conclusions for intra-project cumulative effects only. As above, assessments of inter-project cumulative effects are presented within each topic ES chapter (**ES Chapter 5 to ES Chapter 16** (Doc Ref. 6.1)).

17.1.3. This chapter presents the findings of the assessment of intra-project cumulative effects resulting from the Scheme where these are not already considered within topic specific chapters of the ES (see Table 17-1). Where appropriate, this chapter identifies additional measures to address the potential significant intra-

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<sup>1</sup> The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. Available at: <https://www.legislation.gov.uk/ukxi/2017/572/contents> [Accessed 9 December 2025]

project cumulative effects during the construction, operational and decommissioning phases of the Scheme.

- 17.1.4. The assessment has been based upon the Scheme design outlined within **ES Chapter 2: The Scheme** (Doc Ref. 6.1).

## 17.2. Legislation, Policy and Guidance

- 17.2.1. Regulation 5(2) of the EIA Regulations<sup>Error! Bookmark not defined.</sup> 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 subparagraphs (a) to (d).”*
- 17.2.2. There is no further legislation, policy, or guidance beyond the need for an assessment of the interrelationships between types of effects.

## 17.3. Consultation

- 17.3.1. A request for an EIA Scoping Opinion, provided in **ES Appendix 1-1: EIA Scoping Report** (Doc Ref. 6.3), was sought from the Secretary of State through the Planning Inspectorate in 2024 as part of the EIA Scoping Process. No comments regarding the intra-project cumulative assessment were received in the EIA Scoping Opinion.
- 17.3.2. Further pre-application consultation was undertaken through the publication of the Preliminary Environmental Information Report (PEIR) as part of statutory consultation. The **Consultation Report** (Doc Ref. 5.1) and **Consultation Report Appendices** (Doc Ref. 5.1) provide further detailed responses to the feedback received during statutory consultation. No comments regarding the intra-project cumulative assessment were received during statutory consultation or subsequent targeted consultations.

## 17.4. Assessment Methodology

- 17.4.1. The assessment of intra-project cumulative effects considers the potential for multiple direct or indirect effects resulting from the Scheme to cause an in-combination effects on a single receptor. There are no specific, relevant guidelines on how the assessment of effect interactions should be undertaken so the assessment has been undertaken on a qualitative basis using the conclusions

of the individual assessments presented in **ES Chapter 5 to ES Chapter 16** (Doc Ref. 6.1) and informed by professional judgement.

- 17.4.2. The embedded design mitigation and additional mitigation, where proposed in other technical chapters, is assumed to be implemented before consideration of the effects in this chapter. Therefore, direct and indirect residual effects in **ES Chapter 5 to ES Chapter 16** (Doc Ref. 6.1) that are classed as minor, moderate, or major have been considered in this chapter. Residual effects which are classified as negligible or neutral have been excluded from the assessment of the effect interactions as, by virtue of their definition, they are considered as either imperceptible effects to a resource or receptor or they do not result in an adverse or a beneficial effect.
- 17.4.3. Only receptors that are expected to be subject to more than one residual effect of minor significance or above have been included in the assessment. Receptors predicted to be affected by only a single effect (e.g. only noise) are excluded because there is considered to be no potential for effect interactions to take place.
- 17.4.4. For some topics, the assessment undertaken has also already accounted for impacts on receptors arising from the various aspects of the Scheme. For example, the assessment of impact to the receptors identified in **ES Chapter 9: Ecology and Biodiversity** (Doc Ref. 6.1) already takes into consideration the combined impact from noise, lighting, and air quality. Therefore, these have also been excluded from the assessment as there is considered to be no potential for further effect interactions to take place.
- 17.4.5. To ensure a robust worst-case assessment, landscape and visual residual effects during operation for year 1 (identified in **ES Chapter 12: Landscape and Visual** (Doc Ref. 6.1)) are considered for the effect interactions (as opposed to the Year 15 impacts with full vegetation growth in summer).
- 17.4.6. The receptors or resources which may experience effect interactions are identified in Table 17-1. Where more than one effect (of minor significance or above) on a particular receptor/resource has been identified, the potential for effect interactions has been assessed in Section 17.5 of this chapter.

**Table 17-1: List of Sensitive Receptors Considered in more than one ES Chapter and the Potential for Intra-Project Cumulative Effects**

Category	Description of Receptor or Resource	Potential Effects	Potential for Intra-Project Cumulative Effects
Community facilities	Users of community facilities near the Scheme.	Noise and vibration, air quality, traffic and transport, landscape and visual, glint and glare, and socio-economics and land use effects.	Yes, there is potential for effect interactions at community facilities which have been identified as having the potential to experience multiple effects above negligible during the construction, operational and decommissioning phases. Further assessment is presented in Section 17.5 below.
Residential properties	Existing residential properties near the Scheme.	Noise and vibration, air quality, traffic and transport, landscape and visual, glint and glare, and socio-economics and land use effects.	Yes, there is potential for effect interactions at residential properties during the construction, operation, and decommissioning phases. Further assessment is presented in Section 17.5 below.
Business premises	Existing businesses and their workers near the Scheme.	Noise and vibration, air quality, traffic and transport, landscape and visual, glint and glare, and socio-	No, there are no existing businesses which have been identified which might experience multiple effects above negligible during the construction,

Category	Description of Receptor or Resource	Potential Effects	Potential for Intra-Project Cumulative Effects
		economics and land use effects.	operation, and decommissioning phases. Therefore, business premises have not been considered further in this ES chapter.
Local highway network	Users of local roads surrounding the Scheme.	Noise and vibration, traffic and transport, landscape and visual, and glint and glare effects.	Yes, there is potential for effect interactions along the local highway network during the construction, operation, and decommissioning phases. Further assessment is presented in Section 17.5 below.
Public transport network	Users of public transport network (i.e. buses, rail) surrounding the Scheme.	Traffic and transport, landscape and visual effects.	No, public transport users subject to traffic and transport impacts are not expected to experience any worse effect through exposure to landscape and visual effects. Therefore, the public transport network has not been considered further in this ES chapter.
Non-motorised routes	Users of footways and public rights of way (PRoW).	Noise and vibration, air quality, traffic and transport, landscape and visual, glint and glare, and socio-	Yes, there is potential for effect interactions along local footways and PRoW networks during the operational phase only, where users may be affected

Category	Description of Receptor or Resource	Potential Effects	Potential for Intra-Project Cumulative Effects
		economics and land use effects.	by both landscape and visual and glint and glare effects. Further assessment is presented in Section 17.5 below.
Heritage assets	Heritage assets in proximity to the Scheme, such as Scheduled Monuments, Listed buildings and locally listed buildings and buried heritage assets.	Noise and vibration, air quality, traffic and transport, landscape and visual, water environment and direct effects due to land take and disturbance, effects on setting.	No, impacts from other environmental topics on heritage assets have already been considered in the assessment presented within <b>ES Chapter 8: Cultural Heritage</b> (Doc Ref. 6.1). Therefore, heritage assets have not been considered further in this ES chapter.
Ecology	Ecological receptors and habitats in the local and regional area, including protected species and designated sites.	Noise and vibration, air quality, climate, water environment, and effects due to land take and disturbance.	No, impacts from other environmental topics on ecological and biodiversity receptors have already been considered in the assessment presented within <b>ES Chapter 9: Ecology and Biodiversity</b> (Doc Ref. 6.1). Therefore, ecology has not been considered further in this ES chapter.
Human Health	Health of residents and visitors in areas surrounding the Scheme.	Noise and vibration, air quality, climate, traffic and transport, landscape and	No, impacts from other environmental topics on human health have already been considered in the assessment presented

Category	Description of Receptor or Resource	Potential Effects	Potential for Intra-Project Cumulative Effects
		visual, water environment, socio-economics and land use, glint and glare, and electric magnetic fields effects.	within <b>ES Chapter 10: Human Health</b> (Doc Ref. 6.1). Therefore, human health has not been considered further in this ES chapter.
Water Environment	Watercourses and other surface water features.	Direct effects due to works and contamination from existing ground conditions. Impacts associated with changes in climate.	No, impacts from other environmental topics on the water environment have already been considered in the assessment presented within <b>ES Chapter 11: Hydrology and Flood Risk</b> (Doc Ref. 6.1). Therefore, the water environment has not been considered further in this ES chapter.
Landscape assets	Geographical areas which have readily identifiable characteristics.	Noise and vibration, air quality, traffic and transport, landscape and visual, and glint and glare effects.	No, impacts from other environmental topics on the character of landscape areas have already been considered in the assessment presented within <b>ES Chapter 12: Landscape and Visual</b> (Doc Ref. 6.1). Therefore, landscape assets have not been considered further in this ES chapter.

17.4.7. The significance of intra-project cumulative effects has been determined in accordance with the criteria set out in Table 17-2. The terminology for significance of effect differs from the general assessment methodology, presented in **ES Chapter 4: Overview of the EIA Process** (Doc Ref. 6.1) so that the significance of effects can be differentiated.

**Table 17-2: Effect Interactions Significance**

Significance Category	Typical Descriptors of Effect
Very large (adverse or beneficial)	Where the combined impacts of the Scheme upon an individual or collection of environmental receptors would be very highly significant (positive or negative). Effects would be permanent for receptors of very high value.
Large (adverse or beneficial)	Where the combined impacts of the Scheme upon an individual or collection of environmental receptors would be highly significant (positive or negative). Effects would be: <ul style="list-style-type: none"> <li>• Widespread/large-scale for receptors of high-value;</li> <li>• Permanent for a receptor or receptors of high value;</li> <li>• Localised for a receptor or receptors of very high value; or</li> <li>• Temporary for a receptor or receptors of very high value.</li> </ul>
Moderate (adverse or beneficial)	Where the combined impacts of the Scheme upon an individual or collection of environmental receptors would be significant (positive or negative). Effects would be: <ul style="list-style-type: none"> <li>• Permanent for a receptor or receptors of medium value;</li> <li>• Localised for a receptor or receptors of high value; or</li> <li>• Temporary for a receptor or receptors of high value.</li> </ul>

Significance Category	Typical Descriptors of Effect
Slight (adverse or beneficial)	<p>Where the combined impacts of the Scheme upon an individual or collection of environmental receptors would be noteworthy but not significant (positive or negative). Effects would be:</p> <ul style="list-style-type: none"> <li>• Permanent for a receptor or receptors of low value;</li> <li>• Localised for a receptor or receptors of medium value; or</li> <li>• Temporary for a receptor or receptors of medium value.</li> </ul>
Neutral	<p>Where the combined impacts of the Scheme upon an individual or collection of environmental receptors would be negligible and not significant (positive or negative).</p>
No significant effect interactions	<p>Where the combined impacts of the Scheme are not likely to lead to a change in the significance of effects at a receptor, when compared with considering these impacts in isolation.</p>

### 17.5. Assessment of Intra-Project Cumulative Effects

17.5.1. The effects of different environmental impacts from the Scheme on a single receptor have been determined following the completion of the assessments for all environmental topics (ES Chapter 5 to ES Chapter 16 (Doc Ref. 6.1)) and are detailed below.

17.5.2. Table 17-1 identified where these effects may lead to intra-project cumulative effects. In summary, these included:

- Community facilities;
- Residential properties;
- Local highway network; and
- Non-motorised routes (including PRow).

17.5.3. Receptors, such as heritage assets, ecological receptors, and human health, were found to experience intra-project cumulative effects but the respective ES

chapters inherently cover any combined effects on these receptors. Therefore, no further assessment of these receptors is provided in this chapter.

- 17.5.4. Table 17-3 and Table 17-4 summarise where a receptor has been identified to experience multiple effects above the negligible effect category in **ES Chapter 6: Air Quality** (Doc Ref. 6.1), **ES Chapter 12: Landscape and Visual Amenity** (Doc Ref. 6.1), **ES Chapter 13: Noise and Vibration** (Doc Ref. 6.1), **ES Chapter 15: Traffic and Access** (Doc Ref. 6.1) and **ES Chapter 16: Other Environmental Topics, Section 16.4 Glint and Glare** (Doc Ref. 6.1), as applicable. Table 17-3 and Table 17-4 summarise the potential intra-project cumulative effects interactions during the construction and decommissioning phases (which are assumed to have the same impacts) and operational phase, respectively. Where no potential intra-project cumulative effects are listed for a sensitive receptor or resource which has the potential for intra-project cumulative effects, this is because the assessment did not identify any effects from more than one source. Representative receptor locations from the technical assessments have been used. It is considered that the beneficial effects with regards to employment and economic growth identified within **ES Chapter 14: Socio-Economics and Land Use** (Doc Ref. 6.1) do not have the potential to combine with the adverse effects identified, and therefore, have been excluded from Table 17-3 and Table 17-4. Some receptors do not experience multiple residual effects (i.e. intra-project cumulative effects) during both the construction and decommissioning phases and operational phase. Therefore, some receptors presented in Table 17-3 are not included in Table 17-4, and vice versa.
- 17.5.5. During the construction phase, there is the potential for significant effect interactions to occur where high sensitivity receptors, such as residential properties or sensitive community receptors within 300m of the Site, are affected by visual, noise and vibration, air quality, and traffic and access effects. These may lead to an increased sense of disturbance, however, these intra-project cumulative effects would be short-term temporary, transient, and unlikely to be continuous throughout the construction period. The effects will be managed and minimised in accordance with the measures outlined in the **Outline Construction Environmental Management Plan (OCEMP)** (Doc Ref. 7.10). It is considered that the effects during the decommissioning phase would be no worse than those identified for the construction phase with management measures for decommissioning effects set out within the **Outline Decommissioning Environmental Management Plan (ODEMP)** (Doc Ref. 7.12). No significant effect interactions during the construction and decommissioning phases were identified for the users of the local highway network.

17.5.6. During the operational phase, there is the potential for significant effect interactions to occur where high sensitivity receptors, such as residential properties within 300m of the Site, are affected by visual, noise, and glint and glare effects. However, in some instances, these effect interactions are expected to reduce once landscaping matures to screen views of the Scheme. The effects will also be managed in accordance with the measures identified within the **Outline Operational Environmental Management Plan (OOEMP)** (Doc Ref. 7.11) and the **Outline Landscape and Ecology Management Plan (OLEMP)** (Doc Ref. 7.16). No significant effect interactions during the operational phase were identified for the users of the local highway network and non-motorised routes.

**Table 17-3: Potential Intra-Project Cumulative Effects during the Construction and Decommissioning Phases**

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
<b>Community Facilities</b>					
Gedney Hill Golf Club Noise and Vibration Receptor(s): RG31	Moderate adverse (Significant)	Negligible	Minor adverse (construction dust)	n/a	<b>Slight adverse (not significant)</b> Temporary short-term significant visual impact and non-significant air quality impact to a receptor of medium value during the construction and decommissioning phases.
Gedney Hill Special Needs Establishment Noise and Vibration Receptor(s): RG32	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	n/a	<b>Moderate adverse (significant)</b> Temporary short-term significant visual impact and non-significant noise and air quality impacts to a receptor of high value during the construction and decommissioning phases.
<b>Residential Properties</b>					

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Residential properties on Clout Drove/Wash Bank Noise and Vibration Receptor(s): RG01, RG02	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	Negligible	<b>Moderate adverse (significant)</b> Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Spalding Road Noise and Vibration Receptor(s): RG03	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	n/a	<b>Moderate adverse (significant)</b> Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Queen’s Bank	Minor adverse to Moderate	Minor adverse (construction noise)	Minor adverse (construction dust)	Negligible	<b>Moderate adverse (significant)</b> Temporary short-term significant visual impact and non-significant noise and air

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Noise and Vibration Receptor(s): RG05, RG06, RG08, RG11	adverse (Significant)				quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Martins Road  Noise and Vibration Receptor(s): RG07	Moderate adverse (Significant)	Minor adverse (construction noise and vibration, traffic noise)	Minor adverse (construction dust)	Minor adverse (severance, pedestrian delay, amenity, driver delay, and road safety)	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and vibration, air quality, and transport and access impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Hull's Drove  Noise and Vibration Receptor(s): RG09	Moderate adverse (Significant)	Minor adverse (construction noise and traffic noise)	Minor adverse (construction dust)	Minor adverse (severance, pedestrian delay, amenity and road safety)	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise, air quality, and transport and access impacts to receptors of high value during the construction and decommissioning phases.

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Residential properties on Back Bank/ Green Bank/ Chapel Hill  Noise and Vibration Receptor(s): RG10, RG15, RG16, RG17	Moderate adverse (Significant)	Negligible to Minor adverse (construction noise)	Minor adverse (construction dust)	n/a	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Eaugate Road  Noise and Vibration Receptor(s): RG13	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	n/a	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Residential properties on Broad Gate (South)/ Chapel Gate/ Parson's Lane  Noise and Vibration Receptor(s): RG14, RG18, RG19, RG20, RG21, RG22, RG23	Moderate adverse (Significant)	Negligible to Minor adverse (construction noise)	Negligible to Minor adverse (construction dust)	Negligible	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Dog Drove North  Noise and Vibration Receptor(s):	Moderate adverse (Significant)	Negligible to Minor adverse (construction noise)	Negligible to Minor adverse (construction dust)	Negligible	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
RG24, RG25, RG26					
Residential properties on Holbeach Drove Gate (B1168)  Noise and Vibration Receptor(s): RG27, RG33	Moderate adverse (Significant)	Negligible to Minor adverse (construction noise)	Minor adverse (construction dust)	Minor adverse (severance and pedestrian delay)	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise, air quality, and transport and access impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Langary Gate Road  Noise and Vibration Receptor(s): RG28, RG29, RG34, RG36	Moderate adverse (Significant)	Negligible to Moderate adverse (Significant) (construction noise and vibration, and traffic noise)	Minor adverse (construction dust)	Minor adverse (severance, pedestrian delay, amenity and road safety)	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual and noise and vibration impacts, and non-significant air quality and transport and access impacts to receptors of high value during the construction and decommissioning phases.

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Residential properties on West Drove North  Noise and Vibration Receptor(s): RG30	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	Negligible	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on North Road  Noise and Vibration Receptor(s): RG35	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	n/a	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Residential properties on Roman Road  Noise and Vibration Receptor(s): RG39, RG40, RG41	Moderate adverse (Significant)	Negligible to Minor adverse (construction noise and vibration)	Minor adverse (construction dust)	n/a	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and vibration and air quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Delgate Bank  Noise and Vibration Receptor(s): RG42, RG54	Moderate adverse (Significant)	Minor adverse (construction noise and vibration)	Minor adverse (construction dust)	Negligible	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and vibration and air quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on West Gate	Moderate adverse (Significant)	Minor adverse (construction noise and vibration)	Minor adverse (construction dust)	Negligible	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and vibration and air quality impacts to

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Noise and Vibration Receptor(s): RG44, RG45, RG46					receptors of high value during the construction and decommissioning phases.
Residential properties on Austendyke Road Noise and Vibration Receptor(s): RG47, RG48, RG49, RG50	Moderate adverse (Significant)	Negligible to Minor adverse (construction noise and vibration)	Minor adverse (construction dust)	Minor adverse (road safety)	<b>Moderate adverse (significant)</b> Temporary short-term significant visual impacts, and non-significant air quality, noise and vibration and transport and access impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Broad Gate (North) Noise and Vibration	Moderate adverse (Significant)	Minor adverse to Moderate adverse (construction noise and vibration)	Negligible to Minor adverse (construction dust)	Negligible	<b>Moderate adverse (significant)</b> Temporary short-term significant visual and noise and vibration impacts, and non-significant air quality impact to receptors of

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Receptor(s): RG51, RG52, RG53, RG56, RG57					high value during the construction and decommissioning phases.
Residential properties on A151 Holbeach Road  Noise and Vibration Receptor(s): RG59	Moderate adverse (Significant)	Minor adverse (construction noise and vibration)	Minor adverse (construction dust)	Minor adverse (road safety)	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and vibration, air quality, and transport and access impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Cross Gate (Wool Hall Farm)  Noise and Vibration	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	Negligible	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and vibration and air quality impacts to receptors of high value during the construction and decommissioning phases.

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Receptor(s): RG60					
Residential properties on Wiseman's Gate  Noise and Vibration Receptor(s): RG62, RG63	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	n/a	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Stone Gate  Noise and Vibration Receptor(s): RG65	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	n/a	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and air quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Marsh Road	Moderate adverse (Significant)	Minor adverse (construction noise)	Minor adverse (construction dust)	n/a	<b>Moderate adverse (significant)</b>  Temporary short-term significant visual impact and non-significant noise and air

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Noise and Vibration Receptor(s): RG68 and RG69					quality impacts to receptors of high value during the construction and decommissioning phases.
Residential properties on Barrier Bank	Moderate adverse (Significant)	Negligible	Negligible	Minor adverse (severance, pedestrian delay, amenity, driver delay and road safety)	<b>Moderate adverse (significant)</b> Temporary short-term significant visual impact and non-significant transport and access impact to a receptor of high value during the construction and decommissioning phases.
<b>Local Highway Network (road users, excluding residents)</b>					
A16 Noise and Vibration and Transport and Access Receptor(s): L1, L7, L14, L15,	Moderate adverse (Significant)	Negligible	Negligible	Minor adverse (road safety and large loads)	<b>Slight adverse (not significant)</b> Temporary short-term significant visual impact and non-significant transport and access impact to a receptor of low value during the construction and decommissioning phases.

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
L18, L33, L34, L35					
Barrier Bank Noise and Vibration and Transport and Access Receptor(s): L21	Moderate adverse (Significant)	Negligible	Negligible	Minor adverse (severance, pedestrian delay, amenity, driver delay and road safety)	<b>Slight adverse (not significant)</b> Temporary short-term significant visual impact and non-significant transport and access impact to a receptor of medium value during the construction and decommissioning phases.
Hull's Drove Noise and Vibration and Transport and Access Receptor(s): L23, L25	Moderate adverse (Significant)	Negligible	Negligible	Minor adverse (severance, pedestrian delay, amenity and road safety)	<b>Slight adverse (not significant)</b> Temporary short-term significant visual impact and non-significant transport and access impact to a receptor of medium value during the construction and decommissioning phases.
B1166 Long Lane	Minor adverse	Minor adverse (construction traffic noise)	Negligible	Minor adverse (severance, pedestrian delay, amenity,	<b>Neutral (not significant)</b> Temporary short-term non-significant visual, noise, and transport and access

Receptor	Landscape and Visual	Noise and Vibration	Air Quality	Transport and Access	Intra-Project Cumulative Effect
Noise and Vibration and Transport and Access Receptor(s): L31				driver delay and road safety)	impacts to a receptor of low value during the construction and decommissioning phases.

**Table 17-4: Potential Intra-Project Cumulative Effects during the Operational Phase**

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
<b>Community Facilities</b>					
Gedney Hill Golf Club Noise and Vibration Receptor(s): RG31 Glint and Glare Receptor(s): R80 (Parcel D)	Moderate adverse (Significant)	Moderate adverse (Significant)	Negligible	Low	<b>Slight adverse (not significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant glint and glare impact to a receptor of medium value during the operational phase.
Gedney Hill Special Needs Establishment Noise and Vibration Receptor(s): RG32	Moderate adverse (Significant)	Moderate adverse (Significant)	Negligible	Low	<b>Moderate adverse (significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant glint and glare impact to a receptor of high value during the operational phase.

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Glint and Glare Receptor(s): R79 to R81 (Parcel D)					
<b>Residential Properties</b>					
Residential properties on Clout Drove/Wash Bank Noise and Vibration Receptor(s): RG01, RG02 Glint and Glare Receptor(s): R7 (Parcels ABC)	Moderate adverse (Significant)	Moderate adverse (Significant)	Negligible to Minor adverse (operational plant noise)	Low	<b>Moderate adverse (significant)</b> Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant noise and glint and glare impacts to receptors of high value during the operational phase.
Residential properties on Barrier Bank	Moderate adverse (Significant)	Moderate adverse (Significant)	Minor adverse	n/a	<b>Moderate adverse (significant)</b> Long-term, reversible and localised and significant visual impact (year 1 and year 15)

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Noise and Vibration Receptor(s): RG04			(operational plant noise)		and non-significant noise impact to receptors of high value during the operational phase.
Residential properties on Queen’s Bank  Noise and Vibration Receptor(s): RG05, RG06, RG08, RG11  Glint and Glare Receptor(s): R11, R12 (Parcels ABC)	Minor adverse to Moderate adverse (Significant)	Negligible to Moderate adverse (Significant)	Negligible to Minor adverse (operational plant noise)	Low	<b>Moderate adverse (significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant noise and glint and glare impacts to receptors of high value during the operational phase.
Residential properties on Martins Road  Noise and Vibration Receptor(s): RG07	Moderate adverse (Significant)	Moderate adverse (Significant)	Minor adverse (operational plant noise)	Low	<b>Moderate adverse (significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant noise and glint and glare impacts to receptors of high value during the operational phase.

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Glint and Glare Receptor(s): R29, R30 (Parcels ABC)					
Residential properties on Hull's Drove Noise and Vibration Receptor(s): RG09 Glint and Glare Receptor(s): R38 (Parcels ABC)	Moderate adverse (Significant)	Minor adverse	Negligible	Low	<b>Moderate adverse (significant) reducing to slight adverse (not significant) by Year 15</b>  Long-term, reversible and localised significant visual impact (year 1) and non-significant visual (year 15) and glint and glare impacts to receptors of high value during the operational phase.
Residential properties on Back Bank/Green Bank/Chapel Hill Noise and Vibration	Moderate adverse (Significant)	Minor adverse	Negligible	Low	<b>Moderate adverse (significant) reducing to slight adverse (not significant) by Year 15</b>  Long-term, reversible and localised significant visual impact (year 1) and non-significant visual (year 15) and glint and

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Receptor(s): RG10, RG15, RG16, RG17  Glint and Glare Receptor(s): R54 to R56 (Parcels ABC)					glare impacts to receptors of high value during the operational phase.
Residential properties on Eaugate Road  Noise and Vibration Receptor(s): RG13  Glint and Glare Receptor(s): R25 to R28 (Parcels ABC)	Minor adverse	Negligible	Negligible	Low	<b>Slight adverse (not significant)</b> reducing to <b>no effect interaction</b> by Year 15.  Long-term, reversible and localised non-significant visual impact (year 1) and glint and glare impacts to receptors of high value during the operational phase. There will be no intra-project cumulative effect once vegetation screening is established.
Residential properties on Broad Gate (South)/ Chapel	Moderate adverse (Significant)	Moderate adverse (Significant)	Negligible to Minor adverse (operational plant noise)	n/a	<b>Moderate adverse (significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant noise impacts to

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Gate/ Parson's Lane  Noise and Vibration Receptor(s): RG14, RG18, RG19, RG20, RG21, RG22, RG23					receptors of high value during the operational phase.
Residential properties on Holbeach Drove Gate (B1168)  Noise and Vibration Receptor(s): RG27, RG33  Glint and Glare Receptor(s): R38 to R47 (Parcel D)	Moderate adverse (Significant)	Minor adverse	Minor adverse (operational plant noise)	Low	<b>Moderate adverse (significant)</b> reducing to <b>slight adverse (not significant)</b> by Year 15  Long-term, reversible and localised significant visual impact (year 1) and non-significant visual (year 15), noise, and glint and glare impacts to receptors of high value during the operational phase.

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Residential properties on Langary Gate Road  Noise and Vibration Receptor(s): RG28, RG29, RG34, RG36  Glint and Glare Receptor(s): R52 (Parcel D)	Moderate adverse (Significant)	Moderate adverse (Significant)	Negligible to Minor adverse (operational plant noise)	Low	<b>Moderate adverse (significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant noise and glint and glare impacts to receptors of high value during the operational phase.
Residential properties on West Drove North  Noise and Vibration Receptor(s): RG30  Glint and Glare Receptor(s): R71, R72 (Parcel D)	Moderate adverse (Significant)	Moderate adverse (Significant)	Negligible	Low	<b>Moderate adverse (significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant glint and glare impact to receptors of high value during the operational phase.

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Residential properties on Roman Road  Noise and Vibration Receptor(s): RG39, RG40, RG41	Moderate adverse (Significant)	Moderate adverse (Significant)	Negligible to Minor adverse (overhead line noise)	n/a	<b>Moderate adverse (significant)</b>  Long-term, reversible and localised visual (year 1 and year 15) and noise impacts to receptors of high value during the operational phase.
Residential properties on Broad Gate (North)  Noise and Vibration Receptor(s): RG51, RG52, RG53, RG56, RG57	Moderate adverse (Significant)	Moderate adverse (Significant)	Negligible to Minor adverse (overhead line noise)	n/a	<b>Moderate adverse (significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant noise impact to receptors of high value during the operational phase.
<b>Local Highway Network (road users, excluding residents)</b>					

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
<p>A16</p> <p>Noise and Vibration Receptor(s): L1, L7, L14, L15, L18, L33, L34, L35</p> <p>Glint and Glare Receptor(s): R79 to R96 (Parcels ABC)</p>	Moderate adverse (Significant)	Moderate adverse (Significant)	n/a	Low	<p><b>Slight adverse (not significant)</b></p> <p>Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant glint and glare impact to a receptor of low value during the operational phase, with only short sections of the overall route impacted.</p>
<p>Queen's Bank</p> <p>Noise and Vibration Receptor(s): L19</p> <p>Glint and Glare Receptor(s): R55 to R73 (Parcels ABC)</p>	Moderate adverse (Significant)	Moderate adverse (Significant)	n/a	Low	<p><b>Slight adverse (not significant)</b></p> <p>Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant glint and glare impacts to a receptor of medium value during the operational phase, with only short sections of the overall route impacted.</p>
B1166 Long Lane	Minor adverse	Negligible	n/a	Low	<p><b>Neutral (not significant) reducing to no effect interaction by Year 15.</b></p>

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Noise and Vibration Receptor(s): L31  Glint and Glare Receptor(s): R36 to R38 (Parcel D)					Long-term, reversible and localised non-significant visual (year 1) and glint and glare impacts to a receptor of low value during the operational phase, with only short sections of the overall route impacted. There will be no intra-project cumulative effect once vegetation screening is established.
West Drove North  Glint and Glare Receptor(s): R70 to R74 (Parcel D)	Moderate adverse (Significant)	Moderate adverse (Significant)	n/a	Low	<b>Slight adverse (not significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant glint and glare impact to a receptor of medium value during the operational phase, with only short sections of the overall route impacted.
Lutton Gate Road  Glint and Glare Receptor(s): R118 to R130 (Parcel D)	Minor adverse	Minor adverse	n/a	Low	<b>Neutral (not significant)</b>  Long-term, reversible and localised non-significant visual (year 1 and year 15) and glint and glare impacts to a receptor of

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
					medium value during the operational phase, with only short sections of the overall route impacted.
Cloot Drove Noise and Vibration Receptor(s): L20, RG01	Moderate adverse (Significant)	Moderate adverse (Significant)	n/a	Low	<b>Slight adverse (not significant)</b> Long-term, reversible and localised significant visual (year 1 and year 15) and non-significant glint and glare impacts to a receptor of medium value during the operational phase, with only short sections of the overall route impacted.
<b>Non-motorised routes</b>					
Footpath Crow/7/1 and Bridleway Crow 17/2 Noise and Vibration	Major adverse (Significant)	Major adverse (Significant)	Not significant	Low	<b>Slight adverse (not significant)</b> Long-term, reversible and localised significant visual (year 1 and year 15) and non-significant glint and glare impact to a receptor of medium value during the operational phase, with only short sections of the overall route impacted.

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Receptor(s): PRow Network  Glint and Glare Receptor(s): R1 to R19 (Parcels ABC)					
Footpath Crow/17/1 along Wash Bank  Noise and Vibration Receptor(s): PRow Network  Glint and Glare Receptor(s): R1 to R19 (Parcels ABC)	Moderate adverse (Significant)	Moderate adverse (Significant)	Not significant	Low	<b>Slight adverse (not significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant glint and glare impact to a receptor of medium value during the operational phase, with only short sections of the overall route impacted.

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Bridleway Crow 11/1 along the South Holland Main Drain at Eaugate Road  Noise and Vibration Receptor(s): PRow Network  Glint and Glare Receptor(s): R19 to R24 (Parcels ABC)	Moderate adverse (Significant)	Moderate adverse (Significant)	Not significant	Low	<b>Slight adverse (not significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant glint and glare impact to a receptor of medium value during the operational phase, with only short sections of the overall route impacted.
Bridleway Crow 11/1 east of Queen’s Bank  Noise and Vibration Receptor(s): PRow Network	Moderate adverse (Significant)	Moderate adverse (Significant)	Not significant	Low	<b>Slight adverse (not significant)</b>  Long-term, reversible and localised significant visual impact (year 1 and year 15) and non-significant glint and glare impact to a receptor of medium value during the operational phase, with only short sections of the overall route impacted.

Receptor	Landscape and Visual		Noise and Vibration	Glint and Glare	Intra-Project Cumulative Effect
	Year 1	Year 15			
Glint and Glare Receptor(s): R19 to R24 (Parcels ABC)					

