

# Heckington Fen Solar Park

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**Environmental Statement | Volume 1: Technical Chapters**

**Chapter 7: Residential Visual Amenity**

Applicant: Ecotricity (Heck Fen Solar) Limited

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**CHAPTER 7: RESIDENTIAL VISUAL AMENITY**

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## 7 RESIDENTIAL VISUAL AMENITY

### 7.1 EXECUTIVE SUMMARY

7.1.1 This **Chapter 7- Residential Visual Amenity Assessment** (RVAA) (document reference 6.1.7) seeks to determine the visual effects upon the identified residential receptors and whether or not the Energy Park would result in the unacceptable consequences to their living conditions such that consent should be refused in the public interest.

7.1.2 The findings of this Chapter 7 of the ES demonstrate that the Energy Park would cause some localised significant visual effects, but such effects would not be overbearing.

### 7.2 INTRODUCTION

7.2.1 This **Chapter 7**, prepared by Pegasus Environmental (part of Pegasus Group), constitutes a Residential Visual Amenity Assessment (RVAA). It contains a detailed assessment of the visual effects upon the nearby residential receptors associated with the settlement of East Heckington and other nearby properties identified within the 1km radii from the boundaries of the Energy Park. Given the concentration of the residential receptors in East Heckington and long term nature of the proposed Energy Park it is considered that only this part of the Proposed Development is relevant in terms of RVAA issues and potential overbearing effects. The Off-site Cable Route would be underground during the operational stage of the Proposed Development with the extension to the existing National Grid Bicker Fen Substation located in a discreet parcel of land, away from any nearby residential receptors, to cause any major significant or overbearing effects.

7.2.2 This Chapter 7, its scope of work and methodology reflects the information provided in the Environmental Impact Assessment Scoping Report, submitted to the Secretary of State on 07 January 2022 (**Appendix 1.1** (document reference 6.3.1.1)).

7.2.3 This Chapter is supported by:

- **Figure 7.1** Energy Park Site Location Plan and Receptor Locations.
- **Figure 7.2** RVAA Aerial Images and Site Photography.
- **Figure 7.3** RVAA Photomontages.
- **Appendix 7.1** RVAA Methodology.
- **Appendix 7.2** RVAA Assessment Table.

7.2.4 This RVAA has been undertaken with regards to the best practice within the Landscape Institute's Guidelines for Landscape and Visual Impact Assessment 3rd Edition (GLVIA3)<sup>1</sup> and more specifically within the Landscape Institute's Technical Guidance Note 2/19.<sup>2</sup>

7.2.5 It is a widely accepted and long held planning principle that no individual person has a private right to a view. However, there are situations where the effect on the outlook or the visual amenity of a residential property and associated living conditions would be so great that it would not be considered in the public interest to permit such conditions to occur where they did not previously exist. This is a high threshold in terms what would be regarded as unacceptable in terms of residential visual amenity and has to date been associated with the assessment of wind farm developments. The impact for large scale solar PV developments of low vertical elevation is novel and the subject of this assessment.

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<sup>1</sup> Landscape Institute's 'Guidelines for Landscape and Visual Impact Assessment' 3rd Edition

<sup>2</sup> Technical Guidance Note 2/19, Residential Visual Amenity Assessment

7.2.6 The requirement for RVAAs has to date been concerned with wind farm planning applications that would potentially give rise to unacceptable effects on residential visual amenity due to their vertical elevation. In this regard, Inspector Lavender within the Carland Cross Appeal Decision (APP/D0840/A/0921030260) summarised within paragraph 23 that:

**“The planning system is designed to protect public rather than private interests, but both interests coincide here where, for example, a visual intrusion is of such a magnitude as to render a property an unattractive place to live. This is because it is not in the public interest to create such living conditions where they did not exist before. This I do not consider that simply being able to see a turbine or turbines from a particular window or part of a garden of a house is sufficient reason to find the visual impact unacceptable (even though a particular occupier might find it objectionable). However, when turbines are present in such number, size and proximity that they represent an unpleasantly overwhelming and unavoidable presence in main views from a house or garden, there is every likelihood that the property concerned would come to be widely regarded as unattractive (rather than simply less attractive, but not necessarily uninhabitable) place in which to live.”**

7.2.7 In recent years RVAAs have been conducted for a number of solar energy schemes, which due to the economy of scale become increasingly larger. This is particularly relevant to solar energy developments that fall within the definition of major infrastructure projects, taken through the Development Consent Order (DCO) process. The approved Cleve Hill Solar Park is the first DCO solar farm in England and included a separate RVAA as part of this Environmental Statement. In comparison, the Sunnica Energy Park (under consideration, correct as of December 2022) excluded a separate RVAA on the basis that none of the analysed residential receptors were assessed as experiencing significant residual adverse effects.

7.2.8 This threshold regarding the acceptability of visual effects on the living conditions of residential properties in the public interest has become widely known within the renewables sector as the ‘Lavender Test’. This RVAA seeks to determine whether or not the Energy Park would give rise to significant visual effects on the surrounding residential properties and whether the proposed infrastructure and new planting of the Energy Park would appear oppressive, overbearing or overwhelming on living conditions as a matter for the public interest.

7.2.9 This RVAA has been undertaken by Chartered Members of the Landscape Institute (CMLI) within Pegasus Group based on on-site assessments carried out between April and May, and in mid-December 2022, and should be read in conjunction with the Landscape and Visual Impact Assessment (see **Chapter 6- Landscape and Visual** (document reference 6.1.6)).

### **7.3 ASSESSMENT APPROACH**

#### **Guidance**

7.3.1 This RVAA draws upon the overarching best practice within the Landscape Institute’s Guidelines for Landscape and Visual Impact Assessment 3<sup>rd</sup> Edition (GLVIA3) and Technical Guidance Note 2/19 with the detailed methodology included in

**Appendix 7.1: RVAA Methodology.** The Technical Guidance Note 2/19 advises in paragraph 1.6 that:

**“It is not uncommon for significant adverse effects on views and visual amenity to be experienced by people at their place of residence as a result of introducing new development in the landscape. In itself this does not necessarily cause a planning concern. However, there are situations where the effect on the outlook / visual amenity of a residential property is so great that it is not generally considered to be in the public interest to permit such conditions where they did not exist before.”**

7.3.2 In accordance with the Technical Guidance Note 2/19, this RVAA comprises a four stage process including:

- 1. Definition of the scope and study area for the assessment – informed by the description of the proposed development, defining the study area extent and scope of the assessment with respect to the properties to be included.
- 2. Evaluation of the baseline visual amenity for the surrounding residential properties – having regard to the landscape and visual context and the development proposed.
- 3. Assessment of the likely change to the visual amenity of the residential properties in accordance with GLVIA3 principles and processes.
- 4. Further assessment in respect of the acceptable threshold for residential visual amenity and living conditions in the public interest.

#### **Definition of the Scope and Study Area**

7.3.3 The scope and study area of residential properties included within this RVAA has been informed by the findings of the Zone of Theoretical Visibility (ZTV) mapping prepared during the PEIR stage and updated for the purpose of **Chapter 6 – Landscape and Visual Impact Assessment** of the ES (document reference 6.1.6), post code data, and consultations during the Scoping and PEIR stage. The identified 1km radii study area is considered appropriate and proportionate. The remaining neighbouring and indeed more distant residential properties that are excluded from this RVAA can be assessed by proxy, based on the findings of this **Chapter 7**. The appropriateness of the study area has been confirmed by North Kesteven District Council in their consultation to **Appendix 1.2: Scoping Opinion** (document reference 6.3.1.2):

**“At this stage the Council consider that the assessment area for the RVAA is likely to be no more than 1km from the site boundary based on the stated dimensions of the plant and equipment proposed.”**

7.3.4 Lincolnshire County Council in their comments on the **PEIR Chapter 7**, suggested that the RVAA assessment should be expanded to include the assessment of potential visual effects brought about by the proposed grid connection and works associated with the existing National Grid Bicker Fen Substation.

7.3.5 The proposed extension and above ground works at the National Grid Bicker Fen Substation would be located on the southern edge of the existing substation, thus away from any nearby residential receptors (see **Figure 2.3- Proposed Development** (document reference 6.2.2)). This particular parcel of land benefits from a strong sense of enclosure to the north, east, and south created by the existing National Grid Bicker Fen Substation itself and the associated existing mitigation planting along Vicarage Drove that surrounds it. The currently open edge of the existing substation and proposed substation

extension is orientated to the west where the landscape is affected by the presence of the Bicker Fen Wind Farm. The closest residential property, west of the proposed substation, is Eau End Farm, which lies some 1.5km away, and west of the South Forty Foot Drain. The elevated man-made banks, associated with the Drain, screen views from this property and indeed other dwellings located to the west of the proposed extension. For that reason, the RVAA does not include the assessment of visual effects brought about by the proposed works in the Cable Route Corridor for the underground grid connection and National Grid Bicker Fen Substation extension works.

7.3.6 In addition, Boston Borough Council raised concerns over the potential cumulative effects upon residential amenity caused by grid connection of a number of cumulative schemes, connecting to the aforementioned Bicker Fen Substation – see Consultation section of this chapter for further details.

7.3.7 The main purpose of the RVAA, however, is not to determine whether major adverse effects are likely to occur but whether such effects would be overbearing to such a degree that the living condition of residential properties would become unacceptable. It is important to reiterate that the works associated within the Cable Route Corridor would be temporary and reversible, with the proposed infrastructure placed underground. Therefore, it is predicted that the operational phase of the Cable Route Corridor would not have any major adverse effects upon the residential amenity. Therefore, the operational phase has been scoped out with no further assessment.

7.3.8 The residential properties included within this RVAA are shown on **Figure 7.1- Energy Park Site Location Plan and Receptor Locations** (document reference 6.2.7) with the photographic evidence and plans provided in **Figure 7.2- RVAA Aerial Images and Site Photography** (document reference 6.2.7). The summary written assessment is presented later in this **Chapter 7**, with the detailed assessment included at **Appendix 7.2- Assessment Table** (document reference 6.2.7) and supported by a series of photomontages at **Figure 7.3- RVAA Photomontages** (document reference 6.2.7).

7.3.9 Given the type and scale of the Energy Park and the dispersed nature of the surrounding residential properties, the likelihood of any significant visual effects is considered to be restricted to those within the immediate surroundings of the Energy Park. This is mainly due to the limited vertical elevation of the proposed solar arrays to a maximum height of +3.5 metres above ground level (agl) in the northern and north eastern parts of the Energy Park, and physical separation between the residential curtilages, the solar modules, and taller elements of the Energy Park.

7.3.10 The layout of the proposed Energy Park has been subject to a number of refinements and therefore differs from that discussed at the PEIR stage- see **Figure 3.1- Working Indicative Site Layout (Revision A)**, **Figure 3.2- Working Indicative Site Layout (Revision E)**, and **Working Indicative Site Layout (Revision H)** (document reference 6.2.3) for visualisations of the iterative design process.

7.3.11 The iterative design process resulted in reduction of the height of the proposed solar modules from +4.5 metres to +3.5 metres maximum agl in the northern and north eastern parts, and +3m agl in the western and southern part of the Energy Park – that closest to the nearest dwellings. Furthermore, the previously proposed decentralised system of multiple 132kV substations and Energy Storage Systems (ESS) and a 400kV substation is now replaced with a single location near the centre of the Energy Park. See **Chapter 3: Site Description, Site Selection and Iterative Design Process** (document reference 6.1.3) for further details on the iterative design process.

7.3.12 As part of the PEIR stage letters were sent to each of the residential properties identified based upon post code data, to request access to the individual properties,

curtilages and private gardens for the assessment. If no response was received, 'proxy viewpoints' have been undertaken from publicly accessible locations. A total of 105 no. of letters were sent to the residential properties identified through the post code data. 3 no. of letters that were sent out have been returned by Royal Mail, with the following feedback:

- Hall Farm Cottage – addressee not available.
- Hall Farm – address incomplete.
- Hydeaway – no such address.

7.3.13 The following 9 no. of residential properties have responded to the request, and been included within the scope of this RVAA as shown on **Figure 7.1- Energy Park Site Location Plan and Receptor Locations** (document reference 6.2.7) :

1. 4 New Cottages, NG34 9LY.
2. Saona, 1 Sidebar Lane, NG34 9LY.
3. Elm Grange, PE20 3QF.
4. The Cottage, East Heckington, PE20 3QF.
5. Home Farm, East Heckington PE20 3QF.
6. 1 Parks Farm Cottage, East Heckington, PE20 3QG.
7. The Lodge, Old Main Road, East Heckington, PE20 3QB.
8. Six Hundred Farm, Six Hundred Drove, East Heckington, PE20 3QA.
9. Cattle Holme Barn, Browns Drove, Swineshead Bridge PE20 3PX.

7.3.14 In addition, residents at 2 Parks Farm Cottage, East Heckington, PE20 3QG, have also responded but were not available to take part in the assessment carried out in Spring 2022.

7.3.15 It is accepted that distant views of the solar modules and proposed substation and central Energy Storage Compound may be perceptible beyond the identified 1km study area. The effects on residential visual amenity and living conditions, however, are unlikely to be significant or unacceptable beyond this identified scope.

7.3.16 It is worth clarifying that the residents at 2 Parks Farm Cottage and 1 Parks Farm Cottage, and indeed the adjoining dwellings, were contacted at the PEIR stage due to the location and extent of the then proposed grid connection route. At the PEIR stage the grid connection route was proposed to pass in a relatively close proximity to this cluster of properties. Following the design work carried out in mid-2022 the extent and location of the Cable Route Corridor was refined and moved further to the east, near Swineshead. Any potential visual effects upon this this particular cluster would not be significant, given the lack to inconsequential inter-visibility with the proposed Cable Route Corridor. For completeness, however, these properties are included in the assessment.

7.3.17 This **Chapter 7** of the ES provides an assessment of all residential receptors identified within the 1km radii study area, as illustrated on **Figure 7.1- Energy Park Site Location Plan and Receptor Locations** (document reference 6.2.7).

### **Limitations to the Assessment**

7.3.18 In undertaking the visual assessment in relation to the RVAA, there are limitations and constraints affecting the outputs from this work. These include:

- During the site visits, weather condition, the time of day, and seasonal factors have influenced the assessment and photographic record of the Energy Park and its surroundings.



- Baseline views were taken in April with some of the broadleaved structural vegetation coming into leaf with further viewpoints recorded in May.
- The assessment of the Proposed Development is based on application drawings that accompany this ES and is assessed on the assumption that the Proposed Development is delivered broadly within the stated parameters outlined on these drawings and associated timescales.
- Where distances and measurements are given, these are approximate and generally calculated from the nearest point of the Proposed Development or Energy Park (or as otherwise stated) to the receptor in question.

**Consultation**

7.3.19 A summary of consultation prior to issue of the Preliminary Environmental Assessment Report (PEIR) in June 2022, outlines matters raised within the Scoping Opinion and how these have been addressed through the ES in relation to Residential Visual Amenity. Only one comment, specific to RVAA was included in the Scoping Opinion, and is included in Table 7.1 below.

**Table 7.1: Summary of Scoping Opinion Responses**

<b>Consultee</b>	<b>Details of Consultee response</b>	<b>How is matter addressed</b>	<b>Location of response</b>
North Kesteven District Council	At this stage the Council consider that the assessment area for the RVAA is likely to be no more than 1km from the site boundary based on the stated dimensions of the plant and equipment proposed	The scope of work for Chapter 7- RVAA includes properties within the defined 1km study area, unless otherwise stated.	<b>Appendix 7.1- RVAA Methodology</b> (document reference 6.3.7.1).

7.3.20 In addition, **Table 7.2** outlines a summary of Section 42 consultation responses since the PEIR.

**Table 7.2: Summary of Section 42 Consultation Responses since PEIR**

<b>Consultee</b>	<b>Details of Consultee response</b>	<b>How is matter addressed</b>	<b>Location of response</b>
Lincolnshire County Council	Suggest that reference is made to considering residential views along the cable route and works associated with the Bicker Fen Substation.	Refinements to the layout and location of the National Grid Bicker Fen Substation Extension Works. Overbearing effects are not anticipated to occur – the receptors have been scoped out.	Paragraphs 7.3.4 – 7.3.7
North Kesteven District Council	RVAA should identify and assess all residential	Scope of work expanded and all properties within	<b>Figure 7.1- Energy Park Site Location Plan and</b>

	receptors beyond the nine visited properties assessed in PEIR Chapter 7.	1km study area assessed.	<p><b>Receptor Locations</b> (document reference 6.2.7)</p> <p><b>Figure 7.2 RVAA Aerial Images and Site Photography</b> (document reference 6.2.7).</p> <p><b>Figure 7.3 RVAA Photomontages</b> (document reference 6.2.7).</p> <p><b>Appendix 7.2-RVAA Assessment Table</b> (document reference 6.3.7.2).</p>
Boston Council	Borough	RVAA should consider the potential cumulative effects caused by grid connection of a number of cumulative schemes, connecting to the Bicker Fen Substation.	<p>Refinements to the Off-site Cable Route Corridor. Overbearing effects are not anticipated to occur – the receptors have been scoped out.</p> <p>Paragraphs 7.3.6 – 7.3.7</p>

**Evaluation of the Baseline Visual Amenity Conditions**

7.3.21 The evaluation of baseline visual amenity considers the type, nature, extent, and quality of the existing views from the residential properties including building curtilages, private gardens, and driveways. Technical Guidance Note 2/19 advises in paragraph 4.11 that:

**“When evaluating the baseline, it is recommended that the following aspects are considered:**

- **the nature and extent of all potentially available existing views from the property and its garden / domestic curtilage, including the proximity and relationship of the property to surrounding landform, landcover and visual foci. This may include primary / main views from the property or domestic curtilage, as well as secondary / peripheral views; and**
- **views as experienced when arriving at or leaving the property, for example from private driveways / access tracks.”**

7.3.22 In accordance with the principles and processes of GLVIA3, the visual effects have been determined by cross-referencing the sensitivity of the visual receptor with the magnitude of change arising from the Energy Park. Residential properties are generally considered to be of high sensitivity within GLVIA3. However, TGN 2/19 advocates a further

detailed review and refined survey of the residential properties in question with regards to the potential sensitivities in relation to the proposed Energy Park development.

- 7.3.23 Higher sensitivity areas of the residential properties might include:
- Views from ground floor windows on principal elevations of the building and are likely to correspond to primary living rooms such as lounge, dining rooms, kitchens, or conservatories.
  - Views from rear gardens or heavily frequented parts of a garden where an appreciation of the surrounding landscape is likely to be fundamental to the enjoyment of the space.
- 7.3.24 Medium sensitivity areas of the residential properties might include:
- Views from upper floor windows on principal elevations of the building likely to correspond to bedrooms and study / office rooms.
  - Views from front gardens or parts of the curtilage to the building where it is likely that the focus of attention is on an activity such as gardening rather than on the surrounding landscape.
- 7.3.25 Lower sensitivity areas of the residential properties might include:
- Views from windows on side elevations and from windows likely to correspond to utility rooms, bathrooms, etc.
  - Views from parts of the garden or building curtilage with a purely functional purpose such as a driveway or storage area, etc or land worked as part of a business.

#### **Determining Assessment of the Sensitivity and Magnitude of Change on the Residential Properties**

- 7.3.26 Visual amenity is defined within GLVIA3 as:

**“The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.”**

7.3.27 Visual effects on the surrounding residential properties would potentially arise through the introduction of the solar arrays, inverters and transformers, security fencing, CCTV, transformers, and substation and energy storage units located within the Energy Park. The solar arrays are typically of low profile but in the case of the Energy Park their upper edge may reach up to +3.5 metres agl. Visual effects can also arise through the removal of landscape features such as woodlands, hedgerows, or trees to expose views of the solar arrays. However, the Applicant has sought to avoid any impacts that would be material to the decision making process.

7.3.28 In general terms, the magnitude of change on the residential properties will decrease with distance from the Energy Park and will reduce further once the proposed mitigation planting has established. Other influencing factors affecting the magnitude of change might include:

- Whether the view of the solar arrays and substation is in a direct or oblique angle from the primary orientation or active frontage of the property.
- The extent to which the view is obstructed by vegetation or other built structures.
- The extent to which the current view is influenced by existing built structures (e.g., buildings, roads, pylons and transmission lines, etc).

7.3.29 The magnitude of change on the surrounding residential properties is assessed on the following scale:

- High – a change in the view that on balance has a defining influence on the overall visual amenity of the residential receptor.
- Medium – some change in the view that on balance is clearly visible and forms an important but not a defining influence on the overall visual amenity of the residential receptor.
- Low – some change in the view that on balance is visible although has a subservient influence on the overall visual amenity of the residential receptor.
- Negligible – no change or small to imperceptible visual influence on the overall visual amenity of the residential receptor.

7.3.30 The methodology for RVAA has been written with regard to the current guidance and Pegasus’ LVIA Methodology - refer to **Appendix 6.1** (document reference 6.3.6.1) for details.

7.3.31 The likely significance of effects is dependent on all of the factors considered in the sensitivity and the magnitude of change upon the residential receptors. These factors are assimilated to assess whether or not the proposed Energy Park will have a likely significant or not significant effect. The variables considered in the evaluation of the sensitivity and the magnitude of change is reviewed holistically to inform the professional judgement of significance.

7.3.32 A likely significant effect will occur where the combination of the variables results in the Energy Park having a definitive effect on the view. A ‘not significant’ effect will occur where the appearance of the Energy Park is not definitive, and the effect continues to be defined principally by its baseline condition.

7.3.33 The matrix below demonstrates the relationship between sensitivity and magnitude of change based on the specific criteria given. At all times, professional judgement is used to determine the overall significance of visual effects. The major effects highlighted in dark grey are considered to be ‘significant’ in terms of the EIA Regulations. It should be noted that whilst an individual effect may be significant, it does not necessarily follow that the proposed Energy Park would be unacceptable, either in terms of the public interest test or when considering the planning balance in relation to the other benefits arising from a solar PV/ energy storage development.

7.3.34 The relationship between sensitivity and magnitude of change is indicated within **Table 7.3** below:

**Table 7.3: Significance Matrix**

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

**Judgement concerning the acceptable threshold for living conditions and residential visual amenity in the public interest**

7.3.35 In this final stage, and only for those residential properties identified as experiencing a major significant effect in the previous stage, a further judgement is required to determine whether the visual effect in question has exceeded the Residential Amenity Threshold. TGN 2/19 advises that this is a matter for professional judgment explained in narrative with clear, unambiguous and rational conclusions.

7.3.36 The difference between significant visual effects and what might be considered to be an unacceptable or overbearing effect has evolved through a number of public inquiries, as stated in Section 7.2 of this **Chapter 7**.

7.3.37 The factors considered in the so called 'Lavender test' require a level of visual effect to arise which is greater than a significant visual effect in EIA terms, for the impact to be unacceptable in planning terms. In the Residential Visual Amenity Assessment (RVAA) Technical Guidance Note 2/19' (LI TGN 2/19) this is referred to as the Residential Visual Amenity Threshold.

7.3.38 It is important to reiterate that the magnitude of change and scale of effects must be of such a degree that a property would become widely regarded as an unattractive place in which to live. In other words, it is not sufficient for a property to simply sustain a significant visual effect for its residential amenity to be unacceptably harmed. For residential visual amenity to be harmed a higher threshold requires to be triggered, whereby the development is seen at such proximity to a house, or in such extent, that it leads to an overwhelming or overbearing effect on the property to the extent that it becomes an unattractive place in which to live. Where this occurs, the matter affects the public interest as such an outcome would be considered to harm the provision of good housing stock

**7.4 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS ON RESIDENTIAL AMENITY**

7.4.1 It is predicted that the construction and decommissioning stage will bring about similar or lower magnitude of change, and similar effects to those assessed during the operational stage of the Energy Park. None of the predicted effects occurring during the construction and decommissioning stage are likely to be overbearing or overwhelming.

7.4.2 The following assessment is written with reference to **Figure 7.1- Energy Park Site Location Plan and Receptor Locations** (document reference 6.2.7) and **Figure 7.3- Photomontages** (document reference 6.2.7). The properties are either identified as an individual dwelling or forming part of a clusters, where they share a similar direction of view and/ or outlook. For completeness, all of the properties within the 1km study area are included in the initial stage of the RVAA (refer to the tabular assessment at **Appendix 7.1- Assessment Table** (document reference 6.3.7.1). Where the assessment concluded that there is no line of sight between the dwelling / property and the Energy Park, such property was excluded from further assessment.

7.4.3 This **Chapter 7** has identified that the proposed Energy Park would result in **major adverse (significant) visual effects** on the following residential properties within the study area:

- Chapel House / Chapel Cottage, NG34 9LY.
- The Bungalow, NG34 9LY.
- No. 1 – No. 4 New Cottages, NG34 9LY.
- Fen Farm, NG34 9LY.

- Broad Green, NG34 9LY.
- Meadow View, NG34 9LY.
- The Bungalow, NG34 9LY.
- Derwent Cottage, NG34 9LY.
- No. 3 The Bungalow, NG34 9LY.
- No. 2 The Bungalow, NG34 9LY.
- Elm Grange, PE20 3QF.
- Rose Cottage, PE20 3QF.
- Rainbow Cottage, PE20 3QF.
- Home Farm, PE20 3QF.
- Beech House, PE20 3QF.
- Oatsheaf Cottage, PE20 3QF.
- Rectory Farm House, PE20 3QF.
- Rectory Cottage, PE20 3QF.
- No. 1 – No. 12 Council Houses, PE20 3QB.
- The Old Church, PE20 3QB.
- Six Hundreds Farmhouse, PE20 3QA.
- Rakes Farm, PE20 3PZ.

## **7.5 MITIGATION AND ENHANCEMENT**

### **Mitigation by Design**

7.5.1 The layout of the proposed Energy Park incorporates a number of built-in mitigation measures:

- Reduction in the extent of the proposed solar modules and refinements to the layout to provide increased physical separation from nearby residential properties – the previously considered solar modules, located some 200m away in the field adjacent to the north of No. 1- 12 Council Houses, have been considered to potentially result in unacceptable and overbearing effects. Thus, this area of solar modules has been removed with the panels set back a further 250m away to increase the separation distance and avoid the risk of failing the so-called 'Lavender Test'.
- Reduction in the panel height from 4.5m to 3.5m in the northern and eastern parts and 3m in the western and southern parts of the Energy Park i.e., that closest to the residential receptors.
- The proposed Onsite Substation and Energy Storage System are now located centrally within the Energy Park, increasing the distance to nearest residential receptors and the settlement of East Heckington. The built form and tree vegetation associated with Six Hundreds Farm provide context and screening, helping to assimilate this part of the Proposed Development.
- The proposed 132kV substations have been removed from the design of the Energy Park with a single centralised compound.
- The indicative 132kV overhead cable route has been removed from the design to avoid the risk of failing the so-called 'Lavender Test'.
- The proposed National Grid Bicker Fen Substation Extension Works are proposed to be located towards the south western corner of the existing National Grid Bicker Fen Substation. The context and surrounding tree vegetation greatly reduce the anticipated landscape character and visual effects.

- Use of metal mesh perimeter fencing (so-called '358' welded mesh panels to BS 1722-14 Fences) instead of palisade fencing. Optional, the use of deer style fencing could be considered at the later stage, but given the distance from the closest residential receptors it is unlikely that such design change would reduce the anticipated scale of effects.

**Additional Mitigation**

7.5.2 In order to reduce the degree of change and anticipated effects, the proposed Energy Park would be enclosed by an approximately 3m – 3.5m and sections of approximately 5m tall native hedgerow along its perimeter. It is envisaged that at such height, the maturing hedgerow would break the lines of sight, estimated to be approximately 1.7m, between the edge of the Energy Park and identified residential receptors when considering views from the ground floor windows and amenity gardens.

7.5.3 It is predicted that with the implementation of the proposed perimeter mitigation hedgerow planting, the identified major significant effects experienced from the ground floor windows and amenity gardens, would reduce to moderate effects at Year 5 (with low magnitude of change).

7.5.4 It is important to reiterate that the proposed additional mitigation measure – the perimeter hedgerow, aims to reduce the degree of residual effects, and has been introduced as part of the EIA iterative design process. It is not required to decrease the effects to an acceptable level in order to pass the Lavender Test. In other words, it is considered that the proposed Energy Park would pass the Lavender Test without the perimeter hedgerow.

**Enhancements**

7.5.5 No further enhancement measures are considered.

**7.6 RESIDUAL EFFECTS**

7.6.1 Following the implementation and successful establishment of the proposed additional mitigation measures – the proposed perimeter hedgerow, it is predicted that all of the identified major adverse and significant effects would have diminished to moderate adverse – refer to **Table 7.4** below and detailed assessment provided in **Appendix 7.2** (document reference 6.3.7.2).

7.6.2 The proposed mitigation planting also helps address the issue of glint and glare with **Chapter 17- Glint and Glare** (document reference 6.1.17) summarising the residual effects as being negligible for all of the identified receptors.

**7.7 CUMULATIVE AND IN-COMBINATION EFFECTS**

7.7.1 Due to the location of the proposed Energy Park, it is predicted that there is no potential for any cumulative or in-combination effects.

**7.8 OVERBEARING EFFECTS**

7.8.1 None of the above identified significantly affected properties have been judged to fail the test of overbearing effects. In other words, the properties would continue to provide an attractive outlook and good living environment, from a visual point of view, albeit affected by the proposed Energy Park. The residents would continue to benefit from views in other directions, gained from the remaining unaffected elevations, and parts of their curtilage not affected by the proposed Energy Park. The properties would remain an

attractive place to live when judged objectively, and would not be subject to any overbearing effects.

## **7.9 SUMMARY**

### **Introduction**

7.9.1 This **Chapter 7** RVAA has sought to determine the visual effects upon the identified residential receptors and whether or not the Energy Park would result in unacceptable consequences to living conditions such that consent should be refused in the public interest.

### **Baseline Conditions**

7.9.2 The majority of the residential receptors identified within the defined 1km radii study area gain views towards the surrounding open countryside and the proposed Energy Park. Views tend to be gained from front or rear elevations and this reflects the settlement pattern, which is strongly associated with the A17, Sidebar Lane, and Brown's Drove.

7.9.3 Not all of the properties, however, benefit from open and unrestricted views out. The majority of the analysed receptors have their views truncated by other built form, perimeter fencing associated with their property or adjacent dwellings, garden vegetation, roadside vegetation or intervening field boundary vegetation, or are affected by the movement associated with the A17. Therefore, the visual baseline is varied, and the nature and character of the views varies to a degree, particularly from the upper floor windows which tend to be more open. Views gained from side elevations tend to be oblique to very oblique or gained at right angle, thus the appreciation of the Energy Park is greatly diminished.

### **Mitigation**

7.9.4 The embedded mitigation measures include the refinements to the layout of the proposed solar modules (reduction in their extent near No. 1 – 12 Council Houses), and relocation of the proposed Onsite Substation and Energy Storage System away from the identified residential receptors. In addition, the proposed National Grid Bicker Fen Substation Extension would be located towards the south western corner of the existing National Grid Bicker Fen Substation, which benefits from a substantial amount of vegetative cover and limited inter-visibility with the surrounding landscape, and indeed the nearby residential receptors. The change from palisade style fencing to metal mesh perimeter fencing is also considered to be appropriate.

### **Likely Significant Effects and Overbearing Effects**

7.9.5 The findings of this **Chapter 7- RVAA** demonstrate that the Energy Park would cause some localised significant visual effects but such effects would not be overbearing. The analysed properties and detailed assessment of the predicted effects are outlined in **Appendix 7.2- Assessment Table** (document reference 6.3.7.2).



**Conclusion**

7.9.6 The proposed Energy Park would cause some highly localised significant visual effects. The residual effects, following the implementation and successful establishment of the proposed additional mitigation measures, are summarised in **Table 7.4** below.

7.9.7 As evidenced in **Appendix 7.2** (document reference 6.3.7.2) to this **Chapter 7**, the visual amenity of the identified residential receptors would not be unacceptably harmed, and the proposed Energy Park would not fail the Residential Visual Amenity Threshold and Lavender Test. The properties would remain an attractive place to live when judged objectively, and would not be subject to any overbearing effects.

Table 7.4: Summary of Effects, Mitigation and Residual Effects

Receptor/ Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation/ Enhancement Measures	Residual Effects	Overbearing Effects
<b>Construction</b>									
Excluded from the assessment as being temporary. Any effects would be similar or lower to those experienced during the operational phase of the proposed Energy Park.									
<b>Operation</b>									
Chapel House / Chapel Cottage, NG34 9LY.	Views from the windows on the eastern elevation.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
The Bungalow, NG34 9LY.	Views from the windows on the eastern elevation.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
No. 1 – No. 4 New Cottages, NG34 9LY.	Views from the ground and first floor windows, and garden on the eastern elevation.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Fen Farm, NG34 9LY.	Views from the ground	Long-term, reversible	High	High	Local	Major	Mitigation planting along	Moderate	No

**ENVIRONMENTAL STATEMENT**

**7. Residential Visual Amenity**

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects	Overbearing Effects
	floor windows and garden.						the perimeter of the Energy Park	<b>(not significant)</b>	
Broad Green, NG34 9LY.	Views from the ground and first floor windows on the eastern elevation.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Meadow View, NG34 9LY.	Views from the ground and first floor windows on the eastern elevation.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
The Bungalow, NG34 9LY.	Views from the ground and first floor windows on the eastern elevation.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Derwent Cottage, NG34 9LY.	Views from the windows on the eastern	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No

**ENVIRONMENTAL STATEMENT**

**7. Residential Visual Amenity**

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects	Overbearing Effects
	elevation and garden.								
No. 3 The Bungalow, NG34 9LY.	Views from the windows on the eastern elevation and garden.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
No. 2 The Bungalow, NG34 9LY.	Views from the windows on the eastern elevation and garden.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Elm Grange, PE20 3QF.	Views from the eastern most edge of the rear garden	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Rose Cottage, PE20 3QF.	Views from the ground and first floor windows on the north rear elevation and the rear garden.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No

**ENVIRONMENTAL STATEMENT**

**7. Residential Visual Amenity**

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects	Overbearing Effects
Rainbow Cottage, PE20 3QF.	Views from the ground and first floor windows on the north rear elevation and the rear garden.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Home Farm, PE20 3QF.	Views from the windows on the eastern elevation and the garden.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Beech House, PE20 3QF.	Views from the ground and first floor windows on the north western to north eastern elevations, and the north	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects	Overbearing Effects
	eastern garden.								
Oatsheaf Cottage, PE20 3QF.	Views from the first floor windows on the north east elevation.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Rectory Farm House, PE20 3QF.	Views from the ground floor windows on the north elevation and rear garden.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Rectory Cottage, PE20 3QF.	Views from the ground and first floor windows on the north elevation and the garden	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
No. 1 – No. 12 Council Houses, PE20 3QB.	Views from the ground and first floor windows on	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects	Overbearing Effects
	the north elevation and the gardens.								
The Old Church, PE20 3QB.	Views from the ground and first floor windows on the north side elevation.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Six Hundreds Farmhouse, PE20 3QA.	Views from the northern most part of the garden.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
Rakes Farm, PE20 3PZ.	Views from the ground and first floor windows and the garden.	Long-term, reversible	High	High	Local	Major	Mitigation planting along the perimeter of the Energy Park	Moderate <b>(not significant)</b>	No
<b>Decommissioning</b>									
Excluded from the assessment as being temporary. Any effects would be similar or lower to those experienced during the operational phase of the proposed Energy Park.									