2 LANDSCAPE AND VISUAL

2.1 INTRODUCTION

2.1.1 This Chapter of the ES considers the landscape and visual effects of the Proposed Development (shown at **Figure 1.4**). It assesses the likely significant effects associated with the existing physical landscape and potential changes to its character and the visual amenity.

2.1.2 The main objectives of the assessment are as follows:

- Identify, evaluate, and describe the current landscape character of the Application Site and its surroundings.
- Determine the sensitivity of the landscape to the type of development proposed.
- Identify potential visual receptors (i.e. people who would be able to see the development) and representative viewpoints and evaluate their sensitivity to the type of changes proposed.
- Identify and describe any likely effects of the development on identified landscape and visual receptors and evaluate their significance.
- Identify and integrate any mitigation measures that may help in offsetting or reducing adverse effects.
- Assess the residual effects upon the identified landscape and visual receptors.

2.1.3 This Chapter is supported by the following figures and appendices:

2.1.4 Figures

- 2.1: SZTV
- 2.2: Landscape Character Plan
- 2.3: Topography Plan
- 2.4: Viewpoint Location Plan

2.1.5 Appendices

- 2.1: Methodology
- 2.2: Landscape Effects Summary Table
- 2.3: Visual Effects Summary Table
- 2.4: Photoviews (Viewpoints 1-15)
- 2.5: Photomontage

2.2 ASSESSMENT APPROACH

Methodology

2.2.1 The methodology for this assessment can be found at **Appendix 2.1**. To confirm this LVIA has been written with regards to current best practice; Guidelines for Landscape and Visual Impact Assessment (2013). Third Edition, Landscape Institute and the Institute for Environmental Management and Assessment (GLVIA3).

Assessment - General Comments

2.2.2 Solar farms tend to give rise to effects within the landscape by virtue of a number of attributes specific to both their individual form and to the location and grouping of solar arrays. These attributes include:

- Strong linear and repetitive form.
- Contrast with sinuous landscape pattern.
- Location (often within elevated landscape or south facing landform).
- Relationship to the scale and nature of the existing landscape.

2.2.3 These attributes may affect different components of the landscape in different ways, or may combine to result in an effect. This assessment of the effects of the Proposed Development on the landscape does not consider the balance of public attitudes towards solar farms. The assessment concentrates instead on the change that the Proposed Development will bring to the different attributes of the landscape on the basis of the magnitude of that change and the sensitivity of the receptor, as assessed by qualified professionals.

2.2.4 The extent of the study area, considered in this LVIA, has been informed by Pegasus' earlier work namely the Landscape & Visual Appraisal (April 2020). The report was prepared in support of Pegasus' Pre Application and Screening Request and contains various figures and site context photographs. Specifically, it illustrates the topography across the local landscape and includes a 'screened' Zone of Theoretical Visibility (SZTV) shown at **Figure 2.1**. Based on the height of the proposed solar panels, being the main element of the Proposed Development, the 5km study area is considered proportionate and appropriate for the purpose of this assessment.

2.2.5 The study area is not intended to provide a boundary beyond which the Proposed Development will not be seen, but rather to define the area within which to assess its potential significant landscape and visual effects. Significant landscape and visual effects are more likely to include effects on close proximity views, the change in character of the Application Site and the area in close proximity to it, as a result of a change in the landscape pattern or the perception of the solar farm.

2.2.6 Physical effects are restricted to the area within the Application Site. They consist of direct effects on the fabric of the Application Site, such as the removal of existing ground cover and landscape elements.

Susceptibility and Value - General Comments

2.2.7 Sensitivity is defined in GLVIA3 as

> **"...a term applied to specific receptors, combining judgments of susceptibility of the receptor to a specific type of change or development proposed and the value related to that receptor."**

2.2.8 Sensitivity is determined by a combination of the value that is attached to a receptor (be it a landscape element, landscape character receptor or view) and the susceptibility of that receptor to changes that would arise as a result of the Proposed Development. Both value and susceptibility are assessed on a scale of high, medium or low. The criteria for assessing the value and susceptibility of landscape elements, landscape character receptors and visual receptors are set out later in this section.

2.2.9 Various factors in relation to the value and susceptibility of landscape elements, landscape character, visual receptors or representative viewpoints are

described in the detailed Methodology **Appendix 2.1** and are cross referenced to determine the overall sensitivity as shown in **Table 2.1**.

Table 2.1: Overall sensitivity of landscape and visual receptor

Term	**Description**			
	Value			
Susceptibility		**High**	**Medium**	**Low**
	High	High	High	Medium
	Medium	High	Medium	Medium
	Low	Medium	Medium	Low

Magnitude of Change - General Comments

2.2.10 Magnitude of change is defined in GLVIA3 as

> **"a term that combines judgements about the size and scale of the effect, the extent over which it occurs, whether it is reversible or irreversible and whether it is short or long term in duration."**

2.2.11 Various factors contribute to the magnitude of change on landscape elements, landscape character, visual receptors and representative viewpoints as set out in **Appendix 2.1**. The magnitude of change is assessed on a scale of high, medium or low.

Nature of Effects - General Comments

2.2.12 GLVIA3 includes an entry that states "*effects can be described as positive or negative (or in some cases neutral) in their consequences for views and visual amenity*." GLVIA3 does not, however, state how negative or positive effects should be assessed, and this therefore becomes a matter of subjective judgement rather than reasoned criteria. Due to inconsistencies with the assessment of negative or positive effects a precautionary approach is applied to this LVIA that assumes all landscape and visual effects are negative or adverse unless otherwise stated.

2.2.13 The approach to this (and the interpretation of positive, negative or neutral effects) in the context of GLVIA3 and this LVIA is set out in detail in **Appendix 2.1**.

Assessment of Significance

2.2.14 The purpose of an LVIA when produced in the context of an EIA is to identify any significant effects on landscape and visual amenity arising from the proposed development.

2.2.15 The likely significance of effects is dependent on all the factors considered in the sensitivity and the magnitude of change, upon the relevant landscape and visual receptors. These factors are assimilated to assess whether the Proposed Development 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.

2.2.16 The sensitivity of the landscape and visual receptor and the magnitude of change arising from the Proposed Development are cross referenced to determine the overall degree and significance of landscape and visual effects.

Table 2.2: Significance Matrix

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

2.2.17 It is important to note that the matrix above is intended to act as a guide to the assessment rather than a formulaic approach. The level (relative significance) of the landscape and visual effects is determined by combining judgements regarding sensitivity of the landscape or view, magnitude of change, duration of effect and the reversibility of the effect. in LVIA, any judgement about what constitutes a significant effect is ostensibly a subjective opinion expressed as in this case by a competent and appropriately qualified professional assessor.

2.2.18 The level (relative significance) of effect is described as Major, Moderate, Minor, or Negligible. No Effect may also be recorded as appropriate where there are no effects.

2.2.19 In the LVIA, those effects described as Major may be regarded as significant effects as required by the EIA Regulations and a summary justification is provided as to whether the effect in question is significant or not significant. These are the effects which the authors of the LVIA consider to be most material in the decision making process. It should be noted that whilst an individual effect may be significant, it does not necessarily follow that the Proposed Development would be unacceptable in the planning balance.

2.2.20 In determining the level of residual effects, all mitigation measures are considered.

Significance of cumulative effects

2.2.21 As with the assessment of effects of the Proposed Development, the significance of cumulative effects is determined through a combination of the sensitivity of the landscape receptor or view and the magnitude of change upon it. The sensitivity of landscape receptors and views is the same in the cumulative assessment as in the assessment of the site itself. However, the definition of a significant cumulative effect is different from a significant effect in the assessment of the site itself, and this means that the magnitude of change is also assessed in a different way as described in **Appendix 2.1**.

Consultation

2.2.22 This LVIA uses the information provided in Pegasus' Landscape & Visual Appraisal (April 2020). The report was used to inform Pegasus' Pre Application and Screening Requests.

2.2.23 The Case Officer at Melton LPA was contacted in January 2020 regarding the approach to the assessment methodology, and potential viewpoint locations based on the red line at the time.

> **"I have read through your proposal and I approve of the very detailed methodology. I discussed this with our Head of Services last week and we agreed that there will be no objection to this proposal if there is limited impact on direct views from designated heritage assets. We are not concerned about the impact on intangible views / wider setting."**

2.2.24 A site visit was carried out in March 2020 to record the agreed views. Early consultation enabled winter views to be recorded and will be used as a basis for the LVIA visual assessment.

Legislative and Policy Framework

2.2.25 This assessment has been undertaken with reference to national and local planning policy including the revised National Planning Policy Framework (NPPF) July 2021. The Planning Statement details the overall planning policy context. Those policies that are relevant in terms of landscape and visual issues are described in the following paragraphs.

National legislation

2.2.26 Legislation of relevance to this assessment includes the following:

- European Landscape Convention: Guidelines for managing landscapes 2010;
- Planning (Listed Buildings and Conservation Areas) Act 1990 - regarding Listed Building protection; and
- Countryside and Rights of Way Act 2000 - regarding Public Rights of Way

National Policy

2.2.27 The National Planning Policy Framework (NPPF) July 2021, sets out the governments planning policies for England and how these are expected to be applied. NPPF paragraph 10 advises that:

> **"So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development."**

2.2.28 Section 12, Achieving well-designed places, paragraph 130 on page 38 states that:

> **"Planning policies and decisions should ensure that developments:**
>
> **...b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;**
>
> **c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);**
>
> **d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit..."**

2.2.29 Section 15, Conserving and enhancing the natural environment, paragraph 174 on page 50 states that:

> **"Planning policies and decisions should contribute to and enhance the natural and local environment by:**

> **a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);**
>
> **b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services - including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; …**
>
> **d) minimising impacts and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures…**
>
> **f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."**

2.2.30 Section 15, Conserving and enhancing the natural environment, paragraph 175 on page 50 states that:

> **"Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies of this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries."**

Local Policy

2.2.31 The Melton Local Plan 2011-2036 was adopted in October 2018 and sets out the local policy framework to deliver sustainable growth within the region. Policies relevant to this assessment, the site and proposed solar project are:

- Policy EN2: Biodiversity and Geodiversity
- Policy EN3: The Melton Green Infrastructure Network
- Policy EN7: Open Space, sport and recreation
- Policy EN10: Energy generation from renewable and low carbon sources
- Policy EN13: Heritage Assets

Scoping Criteria

2.2.32 The Assessment considers the following potential effects in relation to landscape elements, character and visual amenity during the following development phases:

- Construction Phase – 6-9 months;
- Operational Phase- Year 1;
- Operational Phase - Year 15; and the
- Decommissioning Phase - 12 weeks.

2.2.33 The Construction Phase will be assessed in the context of landscape elements present within the Application Site, landscape character and visual receptors within the study area. With regards to the Operational Phase, effects upon the character of the local landscape and visual amenity will be considered at Year 1 i.e. post completion with all landscape mitigation measures being implemented, and at Year 15 once the proposed

planting has matured. The Decommissioning Phase is likely to have similar or comparable effects upon landscape character and visual amenity as those assessed during the Construction Stage. Where relevant specific effects during the Decommissioning Phase have been identified.

Limitations to the Assessment

2.2.34 In undertaking the landscape and visual assessment in relation to the Proposed Development, there are limitations and constraints affecting the outputs from this work. These include:

- The baseline assessment has been based on information readily available at the time of undertaking the assessment.
- The Screened Zone of Theoretical Visibility (SZTV) (**Figure 2.1**) has been used to understand the extent of potential visibility to identify receptors. The SZTV does not demonstrate absolute visibility and is therefore refined through field work with the assessed potential visibility of the Proposed Development.
- During site visits, weather conditions, the time of day, and seasonal factors have influenced the visual assessment and photographic record of the Application Site and its surroundings. Every effort has been made to ensure that the photographs and their locations are "representative" of the variety of receptors and views from a range of distances and directions.
- Winter views (illustrating deciduous trees devoid of leaf) have been obtained for the baseline views. Summer views have not been recorded.
- Access to assess the predicted visual effects from private individual properties outside the Application Site has not been obtained. As a result, the assessment of likely effects has been made from vantage points with representative views taken from the nearest available public viewpoint. GLVIA 3 (Paragraph 6.17) suggests that effects of development on private property are dealt with separately from the LVIA as a 'Residential Amenity Assessment'. This level of assessment has not been part of the scope of this Chapter.
- The assessed development is based on drawings that accompany the planning application; primarily the Landscape Strategy (**Figure 1.4**). The assessment has been carried out on the assumption that the Proposed Development is delivered in line with this drawing.
- The Proposed Development is of a long-term temporary nature (up to 40 years).

2.3 BASELINE CONDITIONS

Site Description and Context

2.3.1 Muston lies on the strategic trunk road network broadly midway between the towns of Grantham to the east and Bingham to the west, linked by the A52 which in turn links to the A1 and A46, respectively.

2.3.2 The surrounding area may best be described as rural, gently undulating agricultural land typical of the Vale of Belvoir. Fields are generally rectilinear, many of which have been bisected by the realignment of the A52 to create a bypass route to the villages of Bottesford and Easthorpe. Field boundaries are formed largely by well-managed hedgerows, with intermittent mature hedgerow trees and some small woodland blocks. Managed woodland and plantations occur further to the south, generally along the scarp of the Belvoir Castle ridgeline such as Cliff Wood. The Castle occupies the high ground of the ridgeline (see **Figure 2.3: Topography Plan**).

2.3.3 Bottesford (and the conjoined settlement of Easthorpe) forms one of the largest villages within the Vale, with smaller villages occurring to the east, south and west including Muston, Woolsthorpe and Redmile. Isolated house and farmsteads occur throughout the area.

2.3.4 The disused Grantham Canal (which extends through to Nottingham to the west) meanders through the Belvoir Vale to the west and south of the site.

Landscape Scale

2.3.5 The majority of elements within the landscape surrounding the site, are generally medium scale, with occasional large scale fields. Hedgerows and hedgerow trees are small scale set within fields of varying size. The settlements of Bottesford and Muston introduce small scale-built elements, with village church spires and towers visible across the landscape.

2.3.6 The A52 to the north imposes an intrusive urbanised element due to its heavily trafficked nature, and associated road and vehicle noise at the northern boundary.

Topography and Enclosure

2.3.7 The landform of the site rises in the north east towards Muston (between 39m to 47m AOD) and surrounded by areas of higher ground (see **Figure 2.3: Topography Plan**). Land rises toward the south with Belvoir Castle occupying higher ground at c.120m AOD. The topography slopes gently down to the low-lying floor of the Vale of Belvoir at c. 26 to 30m AOD to the northwest. Hedgerows and hedgerow trees, along with occasional blocks of woodland introduce a relatively high level of enclosure at lower elevations. Elevated locations are open, offering distant and often unrestricted views across the Vale landscape.

Woodlands, Hedgerows and Trees

2.3.8 Field boundaries are generally delineated by well-managed low hedgerows, forming a strong field pattern. Vegetation cover comprises field boundary trees, small woodlands, tree belts and avenues (focusing on Belvoir Castle), and along watercourses and settlements.

Watercourses

2.3.9 A small watercourse, known as Winterbeck runs broadly north-south along the western boundary of the site. The disused Grantham Canal meanders through the Vale to the west and along the southern boundary of the site.

Built Infrastructure

2.3.10 Small and medium scale built form is generally confined to the surrounding settlements of Bottesford, with domestic and agricultural scale buildings occurring in Muston and other smaller villages. The distinctive but distant (c.2.2km) form of the Belvoir Castle sits on high ground to the south.

2.3.11 The A52 forms the dominant built infrastructure at the northern edge of the site. Villages are linked by smaller, quiet local roads.

2.3.12 The Nottingham to Grantham/Norwich/Skegness railway line runs broadly west to east to the north of Bottesford, before curving southward to run parallel with the A52. It is c.700m to the northeast of the site at its closest point and separated from it by the A52 and Grantham Road.

Landscape Designations

2.3.13 The site does not lie with/or adjacent to any statutory or non-statutory landscape designations (refer to **Figure 1.3: Environmental Designations Plan**).

2.3.14 Muston National Nature Reserve and area of SSSI is located adjacent to the redline boundary.

2.3.15 In term of heritage assets, there are several conservation areas and listed buildings in proximity including listed churches which are visible against the skyline in surrounding views.

2.3.16 Belvoir Castle is subject to heritage designations comprising a Grade I Listed building, Conservation Area and Registered Park and Garden lying approximately 2.2km to the south of the proposed development.

Residential Properties

2.3.17 The closest residential properties to the site are those along Woolsthorpe Lane at the south western edge of Muston. Easthorpe (c.650m to the north west), is separated from the site by the A52 and its associated tall dense hedgerow. One individual residential property known as 'California' lies to the west, off Castle View Road.

Public Highways

2.3.18 The site is accessed via an existing agricultural track connecting to Woolsthorpe Lane to the east. The majority of the roads within the wider area are, however, local and less visually intrusive than the A52, with hedgerow and tree vegetation lining transport corridors.

2.3.19 Castle View Road is located to the west and links with Belvoir Road, about 1.3km to the west of the site.

2.3.20 Easthorpe Lane/Muston Lane link the settlements of Easthorpe and Muston bisected by the A52 to the northeast of the site; this route is now restricted to pedestrian and cycle use.

Public Rights of Way

2.3.21 Footpath F74 extends southeast from Bottesford traversing the A52 and Castle View Road, to link to footpath F90 which runs along the western edge of the site and Muston Gorse Bridge (crossing of the Grantham Canal).

2.3.22 Byway open to all traffic (BOTAT), F85B runs through the site on a northeast to southwest alignment between Muston and Winter Beck. From the BOTAT footpaths F89 and F85c cross Muston NNR, the latter continuing south from the site.

2.3.23 Footpath F82 passes broadly southwest from Muston, through the more northern higher fields of the site to the Grantham canal.

2.3.24 Bridleways and footpaths crisscross land to the east and northeast of Bottesford, north of Muston. These include a promoted route, Viking Way, to the east of the site. The Viking Way is a long distance footpath running 147 miles between the Humber Bridge in North Lincolnshire and Oakham in Rutland.

2.3.25 Public rights of way are limited on the elevated land close to Belvoir Castle, and include a footpath G11 to the west linking the Castle with Redmile village, and the promoted Jubilee Way (Leicestershire). The Jubilee Way is a 20-mile route between Burrough Hill Country Park in the west to Brewer's Grave about 2.5km to the east of the Castle (where it joins Viking Way).

Tranquillity

2.3.26 The wider Vale of Belvoir away from the larger settlements displays a rural, relatively tranquil character. However, the landscape of the site and its surrounds is strongly influenced by traffic along the adjacent A52. Further away from the trunk road, the landscape is rural, and the level of tranquillity increases.

2.4 BASELINE CONDITIONS

National Character Areas

2.4.1 Natural England has identified 159 geographical areas of similar landscape character known as National Character Areas (NCAs). The site and wider area lie entirely within NCA 48 Trent and Belvoir Vales and NCA 74 Leicestershire and Nottinghamshire Wolds.

2.4.2 Extracts of key characteristics of the Trent and Belvoir Vales NCA, as identified by Natural England, that are relevant to this report are:

> **"A gently undulating and low-lying landform in the main, with low ridge dividing shallow, broad river valleys, vales and flood plains.**
>
> **Agriculture is the dominant land use, with most farmland being used for growing cereals, oilseeds and other arable crops…**
>
> **A regular pattern of medium to large fields enclosed by hawthorn hedgerows, and ditches in low-lying areas, dominates the landscape.**
>
> **Extensive use of red bricks and pantiles in the 19th century has contributed to the consistent character of traditional architecture within villages and farmsteads across the area…**
>
> **A predominantly rural and sparsely settled area with small villages and dispersed farms linked by quiet lanes…"**

2.4.3 Extracts of key characteristics of the 74 Leicestershire and Nottinghamshire Wolds NCA, as identified by Natural England, that are relevant to this report are:

> **"A range of rolling hills, with elevated plateaux, narrow river valleys and distinctive scarp slopes.**
>
> **Woodland cover is generally sparse, except for some wooded scarps…**
>
> **Agricultural land use dominates with arable farming on the plateaux tops and pasture on steep sloping valley sides…**

> **Red brick buildings with pantile roofs are widespread and most abundant clustered around churches...**
>
> **Urban influences include overhead lines..."**

2.4.4 The site and surrounding area broadly match the key descriptors of the NCA. Of note is the low-lying landform, agricultural land use, medium fields, red brick architecture found at Muston and other villages around the site and rural villages linked by quiet lanes. The NCA inform the local landscape character identified by Melton Borough Council's Landscape Character Assessment. Due to the scale of the NCA and generality of the descriptions, the NCA are not included within the assessment of landscape character.

Local Character Areas

Melton Borough Council Landscape Character Assessment (2006 and 2011 update)

2.4.5 Melton Borough Council published its landscape character assessment in 2006 with a subsequent update in 2011. The 'Melton Borough Landscape & Historic Urban Character Assessment Report' (2006) identifies twenty-one landscape character areas within the Borough.

2.4.6 The Application Site falls entirely within the Landscape Character Area (LCA) 'Vale of Belvoir', which covers much of the immediate surrounding landscape, to the north of the village of Bottesford and to the south of the A52, covering parts of the southern and western part of the study area (**Figure 2.2: Landscape Character Plan**). Nearby Bottesford and village of Muston fall within the LCA 2 Bottesford. The eastern extent of these two LCAs is defined by the administrative boundaries of the Council. LCA 9 Parkland is the second closest LCA within the Melton boundary, as identified in the published report and is associated with Belvoir Castle.

2.4.7 The full description of the LCAs can be accessed on the Council's website: https://www.meltonplan.co.uk/evidencebase-environment

LCA1 Vale of Belvoir

2.4.8 LCA1 Vale of Belvoir is described as:

> **"An expansive gentle vale landscape with a strong pattern of medium scale rectangular shaped pastoral and arable fields with managed hedgerows and the Grantham canal, punctuated by nucleated villages with prominent church spires."**

2.4.9 The distinctive characteristics are defined in the published assessment as:

- **"Expansive vale**
- **String of nucleated villages**
- **Strong rectangular field pattern of mixed farming bounded by hedges**
- **Local stone in houses and churches"**

2.4.10 The Application Site sits within the expansive gentle vale landscape and possesses a strong pattern, defined by low, managed hedgerows, surrounding the

medium scale arable fields. The nucleated villages of Bottesford and Muston, including their churches are prominent on the skyline of the surrounding landscape. Grantham Canal is present to the west and south. The quality and condition of the landscape is good and considered to be of medium value. The 'Vale of Belvoir' is of medium susceptibility to the Proposed Development. This results in a medium sensitivity overall.

LCA2 Bottesford

2.4.11 LCA2 Bottesford lies along the north east edge of the Application Site and includes Muston, and to the north of the A52 around Bottesford and Easthorpe, is described as:

> **"A nucleated townscape, prominent within the Vale, and nearby villages with surrounding pastures, streamsides and transport routes."**

2.4.12 The distinctive characteristics are defined in the published assessment as:

- **"Town prominent in the vale**
- **Dominated by church at centre**
- **Stream running through**
- **Closely associated pasture"**

2.4.13 The Application Site sits at the edge of the nucleated townscape, which sits at the edge of the vale landscape. The A52 is a prominent feature. The quality and condition of the landscape is good and considered to be of medium value. The 'Bottesford' is of medium susceptibility to the Proposed Development. This results in a medium sensitivity overall.

LCA9 Parkland

2.4.14 LCA9 Parkland lies to the south of the Application Site and includes Belvoir Castle, and is described as:

> **"Historic parkland landscapes with historic houses/castles and a diverse mosaic of ancient, traditional & contemporary agricultural and parkland features and patterns."**

2.4.15 The distinctive characteristics are defined in the published assessment as:

- **"Historic buildings**
- **Parkland landscape or remnant parkland**
- **Plantation woodlands**
- **Ornamental tree groups & specimens**
- **Arable on former parkland"**

2.4.16 The historic associations of the Parkland landscape provide strong landscape pattern and features. The quality and condition of the landscape is very good and considered to be of high value. The 'Parkland' is of high susceptibility to the Proposed Development. This results in a high sensitivity overall.

Landscape Features and Elements

Topography

2.4.17 The Application Site sits on land generally above c.36m AOD, gently undulating with the central part of the Site rising to c.49m AOD. The gently undulating topography is of medium value and susceptibility to the Proposed Development. This results in a medium sensitivity overall.

Land Use/Ground Cover

2.4.18 The Application Site is presently in arable uses, consistent with much of the Vale of Belvoir, and it is therefore a common landscape feature representing typical land uses around Bottesford and Muston. The value of annual crop ground cover in landscape terms is considered to be low. The susceptibility of such arable land to the proposals would also be low, resulting in low sensitivity.

Trees and Hedgerows

2.4.19 Field boundaries are generally delineated by well-managed low hedgerows, forming a strong field pattern. The hedgerows are managed in a manner compatible with arable uses and are well-trimmed and low growing with some gaps or missing sections. There are occasional mature trees which punctuate the skyline. There is a small block of trees within the south east corner of the site. An Arboricultural Impact Assessment has been carried out by Barton Hyett Associates (March 2021) and accompanies the application. It states that *"A total of 98 trees, 24 groups of trees and 60 hedgerows were surveyed."* Of these, one tree was deemed high quality with the remaining trees, groups and hedgerows surveyed as moderate to low quality. The quality and condition of the trees and hedgerows overall is considered to be of medium value and susceptibility to the Proposed Development. This results in a medium sensitivity overall.

Visual Baseline

Zone of Theoretical Visibility

2.4.20 In order to assist with understanding the potential visibility of the scheme from the surrounding landscape, a digital Screened Zone of Theoretical Visibility (SZTV) model has been created for the site. This provides a starting point for visual investigation to illustrate the geographical area within which views of development would be theoretically possible. The models are based on an 'screened' scenario whereby the existing screening effect of substantive areas of existing vegetation or built features in the landscape are taken into account (assuming a height of 15m for woodland and 8m for buildings).

2.4.21 The SZTV is modelled at a 'worst case' maximum panel height of 3m above current ground levels based on the full landholdings shown in each site of land whereas the actual land take required for the solar modules will be proportionately smaller.

2.4.22 The Case Officer at Melton LPA was contacted in January 2020 regarding the approach to the Landscape and Visual Impact Assessment (LVIA) methodology, and potential viewpoint locations. Since this correspondence with the LPA the red line has been changed to include a greater area to the north, up to the A52 and now excludes the NNR. Fields to the northeast, south of Easthorpe Lane have been removed. The SZTV has been updated and can be found at **Figure 2.1: SZTV**.

Representative Photoviews

2.4.23 For the purposes of this assessment, a series of representative publicly accessible views from the area surrounding the site have been identified through desk-top and field studies and consultation. These Viewpoint locations (shown at **Figure 2.4: Viewpoint Location Plan**) are not intended to cover every possible view of the site, but rather they are representative of a range of receptor types at varying distances and orientations to the Application Site.

2.4.24 The representative photoviews (**Appendix 2.4**) demonstrate the relative visibility of the Application Site (and existing features or development on it) and its relationship with the surrounding landscape and built form. The selection of the Viewpoints is based on the following criteria:

- The requirement to provide an even spread of representative viewpoints within the visual envelope.
- The requirement to provide representative viewpoints that consider a human's normal field of vision (i.e. panoramic views).
- From locations which represent a range of near (local views), middle, and long-distance views.

2.4.25 The identified potential viewpoints (**Appendix 2.4**) experienced by visual receptors (residents, road users, PRoW users and designated heritage asset receptors) include:

- PRoW within and around the edges of the site.
- Views from the edge of Bottesford and Muston.
- Beacon Hill, local high point.
- High ground to the south at the edge of Belvoir registered park and gardens.

2.4.26 Whilst private views are relevant, public viewpoints, i.e. from roads and public rights of way and other areas of open public access, are selected since they tend to have a higher incidence of receptors affected.

2.4.27 During the site visits all footpaths and bridleways across the site were walked. Viewpoints from PRoWs within the Proposed Development layout boundary have not been included within the selection of views as it is assumed that there would be a major effect on this high sensitivity group of receptors with such a direct view. Despite any mitigation measures there would still be a high to medium magnitude of change at all stages which would result in major effects.

2.4.28 The representative Viewpoints (**Appendix 2.4: Photoviews**) demonstrate the relative visibility of the Application Site (and existing features or development on it) and its relationship with the surrounding landscape and built form. The selection of the Viewpoints is based on the following criteria:

- The requirement to provide an even spread of representative viewpoints within the visual envelope.
- The requirement to provide representative viewpoints that consider a human's normal field of vision (i.e. panoramic views).
- From locations which represent a range of near (local views), middle, and long-distance views.
- Whilst private views are relevant, public viewpoints, i.e. from roads and public rights of way and other areas of open public access, are selected since they tend to have a higher incidence of receptors affected.
- Views from sensitive receptors within designated landscapes.

2.4.29 The assessment has been carried out to determine the relationship of the Site within its surroundings and its approximate extent of visibility within the wider landscape from publicly accessible locations. The Site visit to record viewpoint photography was carried out in March 2020. These winter views provide a worst-case baseline view when vegetation is out of leaf, providing maximum visibility.

Table 2.3 Selected Viewpoints

Vp number	Name
Viewpoint 1	From footpath F80/3, looking south west
Viewpoint 2	From footpath F82/3, looking south west
Viewpoint 3	From byway F85b/4, looking south west
Viewpoint 4	From byway F85b/2, looking north west
Viewpoint 5	From byway F85b/1, looking north east
Viewpoint 6	From footpath Wool 18/3, Muston Bridge, looking west
Viewpoint 7	From Sedgebrook Road, looking north west
Viewpoint 8	From footpath Wool 9/1, looking north west
Viewpoint 9	From the Jubilee Way, looking north
Viewpoint 10	From footpath G1/2, looking north east
Viewpoint 11	From footpath G2/3, looking north east
Viewpoint 12	From footpath F74/1, looking south east
Viewpoint 13	From Barkestone Lane (off A52), looking east
Viewpoint 14	From footpath F71/2, looking south east
Viewpoint 15	From bridleway F86a/2, Beacon Hill, looking south east

2.4.30 The baseline Viewpoints can be found at **Appendix 2.4: Photoviews**. Two photomontages (**Appendix 2.5: Photomontage)** showing the Proposed Development at years 1 and 15 have been produced for Viewpoints 6 From footpath Wool 18/3, Muston Bridge, looking west, and Viewpoint 9 From the Jubilee Way, looking north.

Viewpoint 1: From footpath F80/3, looking south west

2.4.31 Several PRoW cross the fields between Muston and Easthorpe Lane. The field in the view slopes up to Easthorpe Lane, the edge of which is lined by hedgerow and mature trees, seen in the view and a similar height hedgerow on the southern side which is the boundary of the Application Site. There is a glimpsed, partial view of the north east fields of the Site, to the right of the view. The view is rural with few built elements. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (footpath F80/3) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint 02: From footpath F82/3, looking north west

2.4.32 Footpath F82/3 runs south west through the Site. Due to a combination of proximity of the Site and low gappy hedgerows within and around the Site several fields are partially visible within the north of the Site. The view is open and long ranging across arable fields with occasional features on the skyline such as St Mary's Church, Bottesford and Beacon Hill to the north. Receptor Sensitivity: The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (footpath F82/3) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint 03: From byway F85b/4, looking south west

2.4.33 Byway F85b/4 runs broadly south west along the edge of the Site. Due to a combination of proximity of the Site and low gappy hedgerows within and around the Site several fields are partially visible within the Site between gaps in the hedgerows.

The view is open and long ranging across arable fields with occasional features on the skyline such as Belvoir Castle which sits elevated on the skyline surrounded by trees to the south. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (byway F85b/4) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint 04: From byway F85b/2, looking north west

2.4.34 Byway F85b/4 runs along the edge of the Site at this point. Site land rises in the view creating the skyline to the north. Muston is visible on the skyline to the north east. A well-managed hedgerow runs along the Site boundary. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (byway F85b/2) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint 05: From byway F85b/1, looking north east

2.4.35 - Further south along the byway, the view becomes longer ranging. The site sits on the slope within the view beyond an existing hedge boundary. Muston and St John's Church are visible along the skyline. Several pylons cross the landscape. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (byway F85b/1) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint (Photomontage) 06: From footpath Wool 18/3, Muston Bridge, looking west

2.4.36 The view is slightly elevated along Muston Bridge allowing a view across the intervening fields and towards the Application Site. The view is open across arable fields. Grantham Canal is visible in the foreground. Muston and Bottesford are distinguishable on the skyline. To the south the land begins to rise. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (footpath Wool 18/3) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint 07: From Sedgebrook Road, looking *north west*

2.4.37 Sedgebrook Road runs south from Stenwith to Woolsthorpe by Belvoir. The view towards the Application Site is obscured by intervening ridgeline, visible between the trees which run along the River Devon. The view is rural in nature and not within a landscape designation, it is of medium value. Road (Sedgebrook Road) users are of medium susceptibility. The combined value and susceptibility results in a medium sensitivity for road users at this viewpoint.

Viewpoint 08: From footpath Wool 9/1, looking north west

2.4.38 The topography rises to the east of Woolsthorpe by Belvoir. Wool 9/1 runs south from Sedgebrook Road to Cliff Road. From this elevation, the ridgeline which obscured the Application Site is visible in the middle distance. Higher ground beyond is visible including Beacon Hill, and several vertical features such as pylons and St Mary's church spire, Bottesford. Receptor Sensitivity: The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (footpath Wool 9/1) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint (Photomontage) 09: From the Jubilee Way, looking north

2.4.39 This view is from the edge of the Belvoir Castle Registered Park and Gardens, from the Jubilee Way national trail. From this elevation position views across the landscape are long ranging. The arable fields of the Application Site are visible between Bottesford and Muston. The Site sits relatively low in the vale landscape; higher ground beyond is visible including Beacon Hill, and several vertical features such as pylons and St Mary's church spire, Bottesford. The view is rural in nature and is within Belvoir Castle Registered Park and Gardens, it is of high value. Jubilee Way users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for Jubilee Way users at this viewpoint.

Viewpoint 10: From footpath G1/2, looking north east

2.4.40 Southeast of Redmile, Belvoir Road runs towards Belvoir Castle. Moving along these tree lined roads give a strong sense that you are within the presence of Belvoir Castle estate land. Footpath runs from the crossroads with Long Lane to a block of woodland called The Bushes. Despite being a slightly higher elevation than the Site, the view across the intervening vale landscape is curtailed by the overlapping effect of intervening vegetation. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (footpath G1/2) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint 11: From footpath G2/3, looking north east

2.4.41 Footpath G2/3 runs broadly east towards the Grantham Canal, from Belvoir Road north east of Redmile. There is a relatively clear view across the open vale landscape towards the edge of Muston and fields of the Site to the fore. Most of the Site is not visible. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (footpath G1/3) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint 12: From footpath F74/1, looking south east

2.4.42 Footpath F74/1 runs broadly south from Castle View road, Easthorpe to Belvoir Road. The western fields of the Application Site are visible on the skyline to the left of the view. The landscape slopes south around the vale. Belvoir Castle is visible on the skyline. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (footpath F74/1) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint 13: From Barkestone Lane (off A52), looking east

2.4.43 The A52 runs broadly east west, north of the Site. The view is from the southern edge of Bottesford, from Barkestone Lane. The Application Site is obscured by intervening topography. The view is rural in nature and not within a landscape designation, it is of medium value. Road users (Barkestone Lane and A52) are of medium susceptibility. The combined value and susceptibility results in a medium sensitivity for road users at this viewpoint.

Viewpoint 14: From footpath F71/2, looking south east

2.4.44 Closer to the edge of Bottesford footpath F71/2, crosses open fields, connecting to a wider network of PRoW. Established tree planting along the A52 obscures the view towards the Site. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (footpath F71/2) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

Viewpoint 15: From bridleway F86a/2, Beacon Hill, looking south east

2.4.45 The view from Beacon Hill is relatively open across the intervening landscape, with a direct view towards Belvoir Castle. There is a partial view of the Application Site within the mid-ground of the view, sitting within the vale landscape. The view is rural in nature and not within a landscape designation, it is of medium value. PRoW (footpath F86a/2) users are of high susceptibility. The combined value and susceptibility results in a high sensitivity for PRoW users at this viewpoint.

2.5 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

Proposed Development

2.5.1 is anticipated that the Proposed Development will comprise the following key components:

- The solar panels will be erected for a period of up to 40 years;
- The panels will be mounted on metal frames driven into the ground to a depth of approximately 1-2.5m;
- The panels will be laid out in east–west rows with a space around 3.8-7m between each row to avoid shading;
- The lower edge of a solar panel will be approximately 0.8m from the ground and a maximum height of 3m from ground level to the top of the panel frame;
- The DNO and applicant substations will be in an enclosed compound and will remain in situ at the end of the 40 year operational period of the solar farm, as required by the DNO;
- Each row will be mounted on a simple metal framework which will be driven into the soil removing the need for deep foundations. The mounting system comprises of two separate elements; upright galvanised steel posts which are screwed or pushed into the ground and an aluminium support frame which is bolted together. The system requires no concrete foundations and is designed to be reversible leaving no trace when removed;
- The arrays would utilise a tracking system that uses an east/west system (90 degrees in the morning and 270 degrees in the evening) with elevation angles of up to +/- 60 degrees;
- Plant and equipment to enable grid connection will include a number of inverter housings appropriately spaced across the site. Each cabinet will be accompanied by a transformer;
- There will be a temporary construction compound;
- A 2m high deer / security fence with wooden poles will be installed around the site to protect the solar panels from theft or vandalism. The perimeter fencing includes badger/small mammal friendly access points to allow the passage of Badgers across the application site;
- 3m high pole mounted CCTV security cameras will be provided inside the site and will monitor the integrity of the fence;
- Access tracks will be kept to a minimum around the Site and will be 3.5-5m wide and made of crushed aggregate; and
- The Proposed Development comprises of a solar farm renewable energy generating station supplying up to 49.9MW of clean energy to the local grid distribution network.

Potential Effects

2.5.2 Examples of potential landscape effects arising from solar PV developments considered within the assessment of effects include:

- Field-scale solar PV developments may be particularly visible in open landscapes or on upper hill slopes;
- Large grouping of solar panels tends to reflect the sky, this can make them stand out from their landscape context;
- The perceived industrial character of large-scale solar PV developments could detract from the intrinsically rural character, including landscapes that form a setting to heritage assets;
- Ancillary buildings and security requirements (such as fencing and/or CCTV) may introduce new and unfamiliar features into the rural landscape;
- Solar PV developments can change the land use and appearance of a field or fields, affecting land cover patterns;
- The regular edges of solar PV developments may be conspicuous in more irregular landscapes (particularly where they do not follow contours or where field boundaries are irregular in form);
- The height of racks (up to 3m) means that they may overtop typical hedgerow field boundaries;
- Screen planting around solar PV development, or management changes such as allowing hedges to grow higher, can change the sense of enclosure of a landscape;
- Construction of the solar PV development may result in loss or damage to landscape features such as hedgerow field boundaries; and
- Access tracks may be highly visible, particularly in open or undeveloped landscapes that currently may not contain such infrastructure.

Likely Significant Effects During Construction

2.5.3 Effects are summarised at **Appendix 2.2: Landscape Effects Summary Table** and **Appendix 2.3: Visual Effects Summary Table.**

Landscape Elements and Character of the Site

2.5.4 The nature of the construction works would introduce movement, temporary structures, facilities, and a change of land use. It is expected that the short term, localised enabling and ancillary works and construction activities would not cause significant effects on the topography of the Application Site. Potential direct effects on land use associated with the loss of existing arable land which would include a change of use to these areas were found to be Minor Adverse (not significant). The Proposed Development would not require the loss of significant trees, groups or hedgerow. Loss of a small number of trees and short lengths of hedgerow to facilitate construction works would cause Minor adverse effects, however this would not be significant.

2.5.5 Changes to the landscape character, and the wider landscape of the 'LCA 1 Vale of Belvoir' and 'LCA 2 Bottesford' would be localised, resulting in moderate to low (not significant) effects. The siting and scale of construction works would be sympathetic to the existing landscape, utilising existing access routes and siting solar panels within the existing field pattern. The effects on neighbouring 'LCA 9 Parkland' would be negligible.

2.5.6 It is expected that the short-term construction period would not cause significant effects on the identified landscape character and defining elements of the identified low to medium sensitivity receptors.

Visual Amenity

2.5.7 It is expected that the short term, localised enabling and ancillary works would not cause significant effects on most views experienced by the identified visual receptors (including high and medium sensitivity receptors) and associated representative Viewpoints. Potential visibility of the Application Site is limited throughout the surrounding landscape by intervening landform, vegetation, and the availability of views from high sensitivity receptors, PRoW and residential properties and medium sensitivity road users within the study area.

2.5.8 Views of the proposed construction works experienced from PRoW footpaths F82/3, F85b/4, F85b/2, F74/1, and byway F85b/1, would cause significant adverse effects on these high sensitivity receptors for the short-term. This is due to the extent of works visible and proximity to the Proposed Development particularly in the case of footpath F85b/2 and byway F85b/1, which run along the southern edge of the Site.

Likely Significant Effects During Operation Years 1 and 15

2.5.9 Effects are summarised at **Appendix 2.2: Landscape Effects Summary Table** and **Appendix 2.3: Visual Effects Summary Table.**

Landscape Elements and Character of the Site

2.5.10 The siting and scale of the Proposed Development would be sympathetic to the existing landscape, utilising existing access routes and siting PV panels within the existing field pattern. The Proposed Development (long-term) will sit low in the Vale of Belvoir landscape.

2.5.11 It is expected that the operational Proposed Development would not cause significant effects on the topography of the Application Site.

2.5.12 The landscape proposals are set out at **Figure 1.4: Landscape Strategy** which includes proposed hedgerow planting and management and improved grassland within areas of ecological enhancement. In terms of land use, a less intensive management scheme and proposed mitigation would provide some positive change at year 1.

2.5.13 There would be a small loss of some hedgerow to allow for localised enabling and ancillary works and construction activities, however at Year 1 measures outlined at **Figure 1.4: Landscape Strategy** including native hedgerow and tree planting, infill, and grassland and meadow field margins would be implemented.

2.5.14 It is expected that the operational Proposed Development would not cause significant effects on the identified landscape character of the Vale of Belvoir LCA which covers the Site, or surrounding LCA Bottesford and LCA Parkland. During operation the more settled nature of the completed solar installation would lessen the impact on the overall character. Grassland would be improved and managed. Infill of hedgerows and their management will help to enhance the landscape structure. The inherent mitigation measures incorporated into the layout would not cause a significant change to the assessed landscape effects found at Year 1.

2.5.15 There would be a minor beneficial effect on the land use, trees and hedgerows of the Site provided by infill planting and sowing of wildflower grassland at Year 15.

Visual Amenity

2.5.16 The assessment of viewpoints and associated receptors (including high and medium sensitivity receptors) concludes that the Proposed Development would not cause likely significant effects on most Viewpoints. Potential visibility of the Proposed Development at year 1 is generally limited throughout the surrounding landscape by intervening landform, vegetation, and the availability of views from PRoW, residential areas and roads.

2.5.17 Views of the Proposed Development experienced from PRoW footpaths F82/3, F85b/4, F85b/2, F74/1, and byway F85b/1 would cause significant adverse effects on these high sensitivity receptors at year 1. This is due to the extent of works visible and proximity to the Proposed Development particularly in the case of footpath F85b/2 and byway F85b/1, which run along the southern edge of the Site.

2.5.18 The amount of the Proposed Development visible in the context of wider views would be small at year 15. The inherent mitigation measures incorporated into the layout would improve potential effects on views. Infill, and management of hedgerows would help to screen views PRoW footpaths F82/3, F85b/4, F85b/2, F74/1, and byway F85b/1 reducing the significance of effects to not significant. Proposed hedgerow infill, tree planting and management and implementation of ecological enhancement areas along footpath F85b/2 and byway F85b/1 would reduce the effect on these immediate views to not significant.

Likely Significant Effects During Decommissioning

2.5.19 Effects are summarised at **Appendix 2.2: Landscape Effects Summary Table** and **Appendix 2.3: Visual Effects Summary Table.**

Landscape Elements and Character of the Site

2.5.20 It is expected that the short term, localised enabling and ancillary works and decommissioning activities would not cause significant effects on features of the Application Site.

2.5.21 Decommissioning would cause change to the land use however it can be assumed that mitigation such as established grassland and hedgerow infill would be mature at this stage and would remain after the decommissioning period, having a beneficial effect overall.

2.5.22 Changes to the Vale of Belvoir landscape character would be localised. The siting and scale of decommissioning works would be sympathetic to the existing landscape, utilising existing access routes.

2.5.23 The nature of the decommissioning works would introduce movement, temporary structures, facilities and a change of land use. Changes to the landscape character would be localised. It is expected that the short-term decommissioning period would not cause significant effects on the identified landscape character and defining characteristics. The implemented beneficial mitigation measures would remain after decommissioning. It is expected that the short-term decommissioning works would not cause significant effects on the identified landscape character of the Vale of Belvoir LCA.

Visual Amenity

2.5.24 Potential visibility of the Application Site is limited throughout the surrounding landscape by intervening landform, vegetation and the availability of views from PRoW, residential areas and roads. It is expected that the short term, localised

decommissioning period would not cause significant effects on views experienced by the identified visual receptors (including high and medium sensitivity receptors) and associated representative Viewpoints. The amount of works visible would be small during decommissioning due to established mitigation measures including infill, and management of hedgerows up to 3m and proposed hedgerows and trees.

2.6 MITIGATION AND ENHANCEMENT

Mitigation by Design

Construction and Decommissioning Phases

2.6.1 Standard measures and the adoption of construction best practice methods to avoid, minimise or manage adverse environmental effects, or to ensure realisation of beneficial effects, have been incorporated into the design of the Proposed Development and the methods of its construction and decommissioning from the outset. General mitigation measures to minimise/avoid potential temporary landscape and visual effects during the construction and decommissioning phase include:

- Controlling the lighting of construction compounds and machinery to minimise upward and outward light pollution through lantern design, direction and baffling and ensuring that the minimum area only is lit, for the minimum period;
- Limiting the compaction and disruption to the soil structure within the previously undeveloped areas, so that soil permeability is not reduced;
- Restricting the movement of materials to minimise vehicle tracking across the Application Site;
- Locating compounds and stockpiles in the least visible locations within the Application Site; and
- Protecting vegetation (where appropriate) during construction/decommissioning by fencing, installed before the commencement of construction/decommissioning in compliance with BS5837:2012 Trees in relation to design, demolition and construction - Recommendations.

2.6.2 The substation would be retained, but all other materials and structures would be removed, and the Site would be 'made good' and returned to pre-development agricultural uses. All existing healthy mature trees and hedgerows would be retained and be managed to maintain these landscape features which positively contribute to the landscape character. The Site will be subject to hedgerow and tree planting as part of the Proposed Development. Over 40 years both hedgerows and trees will mature and will be in keeping with the character of the locality and will not be alien in character and appearance terms. As such they will reinforce local character and leave a beneficial legacy beyond the lifetime of the project. This vegetation would have a beneficial effect in landscape and visual terms. Regarding the substation, this would remain as part of the National Grid distribution network infrastructure. This forms a small area of infrastructure.

Operational Phase

2.6.3 The Proposed Development will seek to incorporate a number of mitigation principles. Mitigation measures that have been incorporated into the layout of the Proposed Development as 'embedded mitigation' as part of the iterative design process. Generally, the Proposed Development will seek to retain and enhance existing landscape elements that make a positive contribution to the local landscape character and will incorporate opportunities to enhance the landscape features of the Application Site.

2.6.4 The mitigation measures therefore seek to achieve the following overall objectives:

- To retain and enhance existing landscape elements, particularly the hedgerow field boundaries and field structure;
- Promote the use of traditional field hedges and diversity of native hedgerow species; and
- To minimise any unnecessary overshadowing of the solar panels.

2.6.5 The following measures will be incorporated within the Landscape Strategy:

- Proposing a new native tree belt (10m wide) along a section of the eastern boundary softening the edge with Muston.
- Implementing new lengths of hedgerow along footpaths and accommodating the routes within a 10m wide Green Infrastructure Enhancement Corridor which includes wildflower buffers/margins.
- Reinforcing and enhancing the retained hedgerows across the Site to strengthen the landscape framework and local landscape character.
- Enclosing the open field boundaries with new lengths of native hedgerow.
- Planting a species-rich grassland on the land beneath and surrounding the panels and creating a botanically diverse species-rich wildflower grassland outside of the security fence and alongside the retained and proposed on-Site footpaths.
- An area of complimentary species diverse meadowland is proposed adjacent to Muston Meadows SSSI/NNR at the eastern edge of the site.
- An area of complimentary species diverse grassland habitat adjacent to Muston Meadows SSSI/NNR in the south east corner of the site.
- Areas of ponds/scrapes with tussocky grass/wildflower planting, hibernaculum, logpile, insect hotels are proposed throughout the site.
- A permissive path will link from footpath F90/2 to link up with bridleway F85b/2 creating a looped walk.
- Bat and bird boxes, and Sky lark nesting areas are proposed throughout the site.
- Dotted tree planting to soften views of heritage assets such as Belvoir Castle and local church spires.
- Interpretation boards are proposed within the south of the site.
- Beehives are located in the south east corner of the site.
- Outdoor classrooms and picnic areas will be located at the south west and north east corners of the looped walk.
- A canalside community orchard is located within the southern end of the site.

2.6.6 Further details are provided in the Environmental Enhancement Strategy (EES) which accompanies the application and illustrated at **Figure 1.4: Landscape Strategy.**

2.6.7 Compared to other power generation technologies, Solar PV installations can be easily and economically decommissioned and removed from the Application Site at the end of their economic life. Consequently, the panels are ephemeral in nature and could be removed from the Application Site with negligible residual landscape or visual effects. The Application Site could therefore be returned to its original condition, save for the 132kV substation and compound which will remain in-situ on a permanent basis as required by the DNO. However, the landscape enhancement measures outlined above would remain, providing long-term benefits to the local landscape character of the area.

Residual Effects

2.6.8 No further mitigation or enhancement measures were identified. It is therefore concluded that there will be no significant residual effects.

2.7 CUMULATIVE AND IN-COMBINATION EFFECTS

Cumulative Effects

2.7.1 A list of developments to be considered with regards cumulative effects has been provided in **Chapter 1** (Introduction and Proposed Development) of this ES. The cumulative sites considered here are shown on **Figure 1.2: Cumulative Site Plan**. The following projects are within a 5 km radius:

- 10MW Solar Farm, Land South Of The Railway Line & East Of Station Road, Elton. Constructed and operational. Approximately 4.5km north-west of site.
- 12.4 MW Solar Farm, Lodge Farm, Longhedge Lane. Constructed and operational. Approximately 4.5km north-west from the site.
- 49.9MW Solar Farm, land south of the A1 (Foston- By-Pass). Granted permission subject to conditions 1st March 2021. Approximately 4.9km north-east from the site.
- 49.9MW Solar Farm, land east of Jericho Covert, Jericho Lane. Validated 15th October 2020, still pending decision. Approximately 3.8km west of the site.

2.7.2 Effects are summarised at **Appendix 2.2: Landscape Effects Summary Table** and **Appendix 2.3: Visual Effects Summary Table.**

2.7.3 Land east of Jericho Covert, Jericho Lane cumulative site falls within the Vale of Belvoir LCA. It is assumed that proposals for the scheme will include landscape mitigation measures to retain and enhance existing landscape elements such as hedgerows, trees, and field pattern. The addition of this site in the landscape would not cause significant effects on the landscape character. The remaining cumulative sites fall outside of the LCA assessed within this chapter. There would be no cumulative effect relating to these sites.

2.7.4 Viewpoints 1, 2 and, 6 to 8 are in the direction of cumulative site Land south of the Railway Line and east of station road (to the northwest). Viewpoints 2, 6 to 8 and 10 are in the direction of cumulative site Lodge Farm, Longhedge Lane (to the northwest). Viewpoints 4, 5, 10 and 11 are in the direction of cumulative site land south of the A1(to the northeast). Viewpoints 1, 3, 6 to 8 and 15 are in the direction of cumulative site land east of Jericho Covert (to the west).

2.7.5 Constructed and operational sites Land South of The Railway Line and East of Station Road, and Lodge Farm cumulative sites were not perceptible in the baseline views. There would be no cumulative effects. Due to a combination of distance, intervening topography and vegetation, no cumulative effects were assessed.

2.7.6 Due to the limited effects upon landscape elements, landscape character and visibility of the Proposed Development, and the relationship of the Application Site to the potential cumulative developments, it is concluded that no significant cumulative landscape and visual effects would arise.

In-Combination Effects

2.7.7 In common with **Chapter 3** (Cultural Heritage & Archaeology), this chapter of the ES has identified and assessed the nature and magnitude of potential effects, arising from the Proposed Development in respect of locations which may be of heritage or archaeological interest. Consequently, whilst the two assessments should be read in conjunction, the conclusions reached in respect of the Proposed Development's impact upon such features will not necessarily be the same and should not be assumed to be so.

2.7.8 This assessment has considered landscape and visual features and locations which have heritage or archaeological associations such as the Belvoir Vale LCA and Belvoir Castle. Landscape and visual effects on these receptors were found to be not significant at all phases of the Proposed Development.

2.8 SUMMARY

Introduction

2.8.1 This assessment has considered the likely effects of the Proposed Development. The Proposed Development would be located on agricultural land and would introduce renewable energy infrastructure into the landscape. The proposals have aimed to be integrated into its surroundings and to be consistent with the form, scale and pattern of the existing surrounding landscape.

2.8.2 The site lies within an area of relatively flat, agricultural landscape, interspersed with numerous villages and hedgerows set within the Vale of Belvoir. Hedgerow and woodland block vegetation when viewed across a low-lying topography with occasional variations, can combine to limit or expose views towards parts of the site. This effect has been used to positively inform design of a proposed solar development, particularly where there are existing blocks of woodland and the topography is more consistently flat within the Belvoir Vale.

Baseline Conditions

Landscape Character, Elements and Features Summary

2.8.3 The Application Site falls entirely within the Landscape Character Area (LCA) '1 Vale of Belvoir', which covers much of the immediate surrounding landscape, to the north of the village of Bottesford and to the south of the A52, covering parts of the southern and western part of the study area. Nearby Bottesford and village of Muston fall within the LCA 2 Bottesford. Belvoir Castle falls within LCA 9 Parkland.

2.8.4 The Application Site sits within the expansive gentle 'Vale' landscape and possesses a strong pattern, defined by low, managed hedgerows, surrounding the medium scale arable fields. The nucleated villages of Bottesford and Muston, including their churches are prominent on the skyline of the surrounding landscape. Grantham Canal is present to the west and south.

2.8.5 The Application Site is presently in arable uses, consistent with much of the Vale of Belvoir, and it is therefore a common landscape feature representing typical land uses around Bottesford and Muston. Field boundaries are generally delineated by well-managed low hedgerows, forming a strong field pattern. The hedgerows are managed in a manner compatible with arable uses and are well-trimmed and low growing with some gaps or missing sections. The Application Site sits on gently undulating land with the central part of the Site rising.

Likely Significant Effects

Landscape Character, Elements and Features Summary

2.8.6 The effect of the proposed development on the 'Vale of Belvoir' character area would be moderate adverse at year 1 due the intrusion of the proposed development into the 'gentle vale' landscape, disruption to arable field pattern, and loss of small sections of hedgerow, reducing to low at year 15 with the benefit of landscape proposals.

2.8.7 The Proposed Development would not require the loss of significant trees, groups or hedgerow. Hedgerow loss would be limited to facilitate construction works which may cause adverse effects, however these would be temporary.

2.8.8 The overall effect of the proposed development on vegetation, land use and topography would range from moderate to minor adverse during construction and at year 1, reducing over time to minor with the implemented landscape strategy.

2.8.9 Following decommissioning at the end of the operational life of the panels, the Application Site can be returned to its current condition. There would be minor long-term benefits to the local landscape character arising from the mitigation measures and the enhancements to landscape features within the Application Site.

Baseline Conditions

2.8.10 In order to assist with understanding the potential visibility of the scheme from the surrounding landscape, a digital Screened Zone of Theoretical Visibility (SZTV) model has been created for the site. For the purposes of this assessment, a series of representative publicly accessible views from the area surrounding the site have been identified through desk-top and field studies and consultation. The representative photoviews demonstrate the relative visibility of the Application Site (and existing features or development on it) and its relationship with the surrounding landscape and built form.

2.8.11 The identified visual receptors (residents, road users, PRoW users and designated heritage asset receptors) include:

- PRoW within and around the edges of the site.
- Views from the edge of Bottesford and Muston.
- Beacon Hill, local high point.
- High ground to the south at the edge of Belvoir registered park and gardens.

Likely Significant Effects

Visual Amenity Summary

2.8.12 Views of construction works, and the Proposed Development (at year 1) experienced from PRoW footpath F80/3 (Viewpoint 1), footpath F82/3 (Viewpoint 2), byway F85b/4 (Viewpoint 3), byway F85b/2 (Viewpoint 4), byway F85b/1 (Viewpoint 5) and footpath F74/1 (Viewpoint 12) would cause adverse effects on these high sensitivity receptors. This is due to the extent of the Proposed Development visible and proximity to the Proposed Development particularly in the case of the PRoW which pass through or along the edges of the Site.

2.8.13 The landscape measures incorporated into the layout would at Year 15 improve potential effects on views. Proposed hedgerow enhancement and management would

reduce the effect on views experienced by these footpath users; however, the character of these views would be changed from open views to more contained.

2.8.14 Whilst the site is not within a designated landscape, there are views from elevated areas to the south around Belvoir Castle registered park and gardens. The Castle itself is surrounded by substantial mature vegetation limiting views out. There are several footpaths and bridleway routes including the Jubilee Way.

2.8.15 Given the high sensitivity of PRoW and Jubilee Way users and receptors close to the Castle and across the elevated ridge, the extent of the long-distance view and the complex landscape character, solar panels within the site have the potential to appear as a noticeable feature. Potential mitigation of views from elevated areas north of this may be less effective during winter months when vegetation is out of leaf increasing visibility due to the topography of the site and elevation of views resulting in a moderate effect on high sensitivity receptors, however over time with maturing intervening vegetation this effect may be reduced further. Photomontage Viewpoint 9 illustrates that on balance the site would represent only a small part of the wider view from this distance.

2.8.16 Viewpoints from PRoWs within the Proposed Development layout boundary have not been included within the selection of views as it is assumed that there would be a major effect on this high sensitivity group of receptors with such a direct view. Despite any mitigation measures there would still be a high to medium magnitude of change at all stages which would result in major effects.

Mitigation

2.8.17 Proposals include infill of boundary hedgerows, which would reinforce and enhance landscape elements. Opportunities to enhance the local distinctiveness, character and biodiversity of the area have been introduced as part of the proposed mitigation measures and are outlined within the EES which accompanies the application. These will allow for the infill planting of hedgerow and trees with local native species and implementation and management of existing hedgerows and grassland beneath the panels.

Conclusions

2.8.18 It is concluded that the Proposed Development would have limited harm on the existing positive landscape elements associated with the Application Site. The existing landform of the Application Site would remain largely unchanged except possibly at a localised level during the construction and decommissioning period.

2.8.19 This assessment has demonstrated that the actual area that the Proposed Development would be visible from is considerably smaller than that identified by the SZTV. The visual assessment shows that visibility would be restricted by a combination of the landform, distance from the Application Site and the enclosure provided by intervening vegetation surrounding the Application Site.

2.8.20 The assessment of viewpoints and associated receptors (including high and medium sensitivity receptors) concludes that the Proposed Development would cause limited long-term effects. Effects would be predominantly limited to less than 1km of the Application Site with the visual effects on completion being mostly limited to footpaths within and around the edges of the Site, with direct views of the Proposed Development.

2.8.21 This assessment demonstrates that the Proposed Development could be successfully accommodated within the existing landscape pattern and could be

assimilated into the surrounding landscape without causing any long-term harm to the landscape character, visual amenity, or existing landscape attributes of the area.

Table 2.4: 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 ****
Construction								
Viewpoint 2: From footpath F82/3, looking north west	Construction activities (including movement of construction vehicles) within the north of the Site would be visible.	Temporary	High	High-medium	Local	Major		Major
Viewpoint 3: From byway F85b/4, looking south west	Construction activities (including movement of construction vehicles) within the Site would be visible between and above the existing low, gappy hedgerows.	Temporary	High	Medium	Local	Major		Major
Viewpoint 4: From byway F85b/2, looking north west	Construction activities (including movement of construction vehicles) within the immediate field would be clearly visible due to the proximity of the view.	Temporary	High	High	Local	Major		Major
Viewpoint 5: From byway	Construction activities (including movement of	Temporary	High	High	Local	Major		Major

Receptor/ Receiving Environment	Description of Effect	Nature of Effect *	Sensitivity Value **	Magnitude of Effect **	Geographical Importance ***	Significance of Effects ****	Mitigation/ Enhancement Measures	Residual Effects ****
F85b/1, looking north east	construction vehicles) within the southern fields of the Site would be visible.							
Viewpoint 12: From footpath F74/1, looking south east	There would be a partial view of construction activities within the western fields of the Site.	Temporary	High	Medium	Local	Major		Major
Operation								
Viewpoint 2: From footpath F82/3, looking north west	The completed Proposed Development within the north of the Site would be visible. The panels would sit below the skyline.	Long-term	High	High-low	Local	Major	Allowing the existing hedgerows to grow up (maximum 3m) and enhancing with infill planting would provide some level of screening between the Proposed Development and the footpath.	Moderate
Viewpoint 3: From byway F85b/4, looking south west	The completed Proposed Development within the Site would be visible between and above the existing	Long-term	High	Medium-low	Local	Major	Allowing the existing hedgerows along the eastern edge to grow up (maximum 3m)	Moderate

Receptor/ Receiving Environment	Description of Effect	Nature of Effect *	Sensitivity Value **	Magnitude of Effect **	Geographical Importance ***	Significance of Effects ****	Mitigation/ Enhancement Measures	Residual Effects ****
	low, gappy hedgerows. The Proposed Development would sit below the skyline which rises around Belvoir.						and enhancing with infill planting would provide some level of screening.	
Viewpoint 4: From byway F85b/2, looking north west	The completed Proposed Development within the immediate field would be clearly visible due to the proximity of the view.	Long-term	High	High-low	Local	Major	Allowing the existing hedgerows to grow up (maximum 3m) and enhancing with infill planting where needed would provide a good level of screening between the Proposed Development and the byway. Occasional trees would be in-keeping with the existing trees along the southern side of the byway.	Moderate
Viewpoint 5: From byway F85b/1, looking north east	The completed Proposed Development within the southern fields of the Site would be visible.	Long-term	High	High-low	Local	Major	An area of ecological enhancement will be located along this section of PRoW offsetting	Moderate

Receptor/ Receiving Environment	Description of Effect	Nature of Effect *	Sensitivity Value **	Magnitude of Effect **	Geographical Importance ***	Significance of Effects ****	Mitigation/ Enhancement Measures	Residual Effects ****
							the Proposed Development form the byway. A hedgerow is proposed along the southern edge of the panels along the northern edge of the ecological area.	
Viewpoint 12: From footpath F74/1, looking south east	There would be a partial view of the completed Proposed Development within the western fields of the Site.	Long-term	High	Medium-low	Local	Major	Allowing the existing hedgerows to grow up (maximum 3m) would provide some level of screening between the Proposed Development and the edge of Muston.	Moderate
Cumulative and In-combination								
N/A								

Notes:

* Enter either: Permanent or Temporary / Direct or Indirect

** Only enter a value where a sensitivity v magnitude effects has been used – otherwise 'Not Applicable'

*** Enter either: International, European, United Kingdom, Regional, County, Borough/District or Local

**** Enter either: Major / Moderate / Minor / Negligible AND state whether Beneficial or Adverse (unless negligible)