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TGC RENEWABLES

Proposed Solar Farm at land off Green Lane

Landscape and Visual Impact Appraisal

June 2015

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1 INTRODUCTION

1.1.1 This landscape and visual impact appraisal (LVIA) aims to identify and assess the likely effects of the proposed solar farm on land to the east of Green Lane (as shown on Drawing 316-05-PV), east of Marchington in Staffordshire, upon the landscape character and visual amenity of the site and surrounding area.

2 DESCRIPTION OF THE DEVELOPMENT

2.1.1 The site is located on land off Green Lane, approximately 750m east of Marchington in Staffordshire, and has a total area of 12.3ha. The site would be enclosed by fencing with CCTV, with a total enclosed area of 10.6ha, and the existing boundary trees and hedgerows would remain in place.

2.1.2 The development would consist of groups of solar panels mounted in arrays, set out in long rows running across the site from west to east. Each panel would be matt dark blue in colour and not reflective, they would be mounted on a two posts and have a maximum height of approximately 3m. The ground fixings would be designed to minimise impacts and they would not require concrete foundations.

2.1.3 The panels would be connected to a series of transformers and inverters via underground cables. These would then be connected, again underground, to a substation that would connect to the grid.

2.1.4 The scheme would be located to the east of Green Lane. It would be split into four sections. The northern, eastern and southern sections of the site would be accessed from an existing access tracks that extends from Green Lane. Tracks would be constructed within the eastern and southern sections of the site. These tracks would connect the site access point to three inverter cabins.

2.1.5 The western section of the site would be accessed from an additional existing access point on Green Lane. A track would be constructed adjoining to the site access point. This would extend in an easterly and southerly direction. This track would connect the site access point to two communications buildings, a customer switchroom, a 33kV substation and two inverter cabins. In addition, seven grid balancing equipment containers would be located on this track.

3 METHODOLOGY

General approach

3.1.1 Landscape effects associated with a development relate to changes to the fabric, character and quality of the landscape as a resource and how it is experienced. This requires consideration of the character of the landscape, the elements and features that it contains, and any value attached to the landscape (whether formally or informally).

3.1.2 Landscape assessment / appraisal studies:

- direct effects upon specific landscape elements, especially prominent and eye catching features;
- change in character, which is the distinct, recognisable and consistent pattern of elements that creates distinctiveness and a sense of place;
- subtle effects that contribute towards the experience of intangible characteristics such as tranquility, wildness and cultural associations; and
- effects on designated landscapes, conservation sites, and other acknowledged special areas of interest.

3.1.3 The appraisal of visual effects concerns changes in people's views and visual amenity as a result of changes associated with a proposed development. Effects may result from new landscape elements that cause visual intrusion or new features that obstruct views across the landscape.

3.1.4 Both landscape and visual effects can be adverse, beneficial or neutral, short, medium or long term, permanent or temporary, reversible or irreversible, direct (an effect that is directly attributable to the proposed development) or indirect (effects resulting indirectly from the development as a consequence of the direct effects), and cumulative, relating to additional changes that may arise when the proposed development is considered in conjunction with other similar developments (see Section 8).

3.1.5 The LVIA was carried out using a combination of site and desk based survey and analysis. The methodology used followed recommendations and guidance set out in the following reports:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA 3)[1]; and
- Landscape Character Assessment Guidance[2].

3.1.6 The effects of a development on landscape character and on visual amenity are reported separately, in accordance with GLVIA 3.

The study area

3.1.7 The landscape and visual appraisal considers the site and its surroundings, encompassing an area within a 5km radius of the outermost edge of the development, as it is considered that beyond 5km the development would not result in noticeable effects.

Thresholds and criteria

3.1.8 GLVIA 3 (paragraph 1.20) states that the guidance is "not intended to be prescriptive, in that it does not provide a 'recipe' that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment or appraisal to ensure that the approach and methodology adopted are appropriate to the particular circumstances." This appraisal has therefore defined a set of criteria relating to the potential landscape and visual effects of the proposed development.

Methodology for the appraisal of landscape effects

3.1.9 The level of the landscape effects identified is determined by a consideration of the sensitivity of the landscape receptors and the magnitude of the effects on the landscape.

3.1.10 The nature or sensitivity of a landscape receptor combines judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape, as defined in the GLVIA glossary and in paragraph 5.39 of GLVIA 3. Paragraph 5.39 of GLVIA 3 also states that LVIA sensitivity is similar to the concept of landscape sensitivity used in landscape planning, but is not the same as it is specific to the particular project or development proposed and the location in question. Thus an

[1] Guidelines for Landscape and Visual Impact Assessment, Third Edition, by the Landscape Institute and Institute of Environmental Management and Assessment (2013)
[2] Landscape Character Assessment Guidance for England and Scotland (2002), Countryside Agency in conjunction with Scottish Natural Heritage

appraisal of sensitivity is not strictly part of the initial baseline study of landscape character; it is considered as part of the appraisal of effects of the development.

3.1.11 The nature or magnitude of the effects on the landscape receptors depends upon the size or scale of the changes, the geographical extent of the area influenced, and the duration and reversibility of the effects.

3.1.12 The landscape receptors include the landscape character of the site, the Landscape Character Area (LCA) the site is within, the surrounding LCAs and any designated landscapes within the 5km study area.

Susceptibility to change

3.1.13 This is defined as the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or any particular aesthetic and perceptual aspects) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies (see paragraph 5.40 of GLVIA 3).

Landscape value

3.1.14 Appraisal of value is concerned with the relative value attached to different landscapes by society, recognising (in line with the European Landscape Convention) that all landscapes are important. A consideration of value at the baseline stage informs judgements on the level of effects. Landscapes can be valued by different people for different reasons, connected to a range of factors including landscape quality (condition), scenic quality, rarity, representativeness, conservation interests, recreation value, perceptual aspects and associations (see GLVIA 3 Box 5.1 for definitions). This consensus can be recognised at a local, regional, national or international scale. Table 1 explains how criteria are applied to arrive at an evaluation of landscape value in this appraisal. It is derived from GLVIA 3.

Table 1
Criteria for landscape value

Value	Typical criteria	Typical scale	Typical examples
High	Very good condition, high importance, scenic quality, rarity Limited potential for substitution	National, regional	Country Parks, National Trust Ownership Areas, Registered Historic Parks and Gardens
Medium	Good condition, medium importance, scenic quality, rarity	Regional, local authority	Undesignated but value expressed for instance in demonstrable use

Table 1 Criteria for landscape value			
Value	**Typical criteria**	**Typical scale**	**Typical examples**
	Limited potential for substitution		
Low	Poor condition, low importance, scenic quality, rarity	Local community	Areas identified as having some redeeming feature or features and possibly identified for improvement
Very low	Very poor condition, low importance, scenic quality, rarity	Local community	Areas identified for recovery

3.1.15 The EIA Regulations do not require study of whether a development complies with planning policy; this is also the case for a non-EIA LVIA. Planning policy is, however, important and relevant to LVIA when it is a recognition or reflection of the value placed upon a particular landscape or its attributes by society. Thus designations like National Parks and AONB have relevance since they identify a consensus about this aforesaid value. Reference to planning policy can therefore assist the assessor in identifying sensitive receptors.

Sensitivity of the landscape resource to the proposed solar farm development

3.1.16 In the context of this development, the scale of the sensitivity to the proposed solar farm development is as outlined in Table 2 and is derived from GLVIA 3.

Table 2 Levels of landscape sensitivity to the proposed solar farm development	
Low sensitivity	These landscapes are likely to be of low value, have a strong sense of enclosure that reduces visual sensitivity, are likely to be already affected by man-made features, have reduced tranquillity, are likely to have little inter-visibility with adjacent landscapes and exhibit a low density of sensitive landscape areas/features.
Medium – low sensitivity	These landscapes are likely to be of medium to low value, have some enclosure, may already be affected by some man-made features, have little inter-visibility with adjacent landscapes or exhibit a moderate-low density of sensitive landscape areas/features.
Medium sensitivity	These landscapes are likely to be of medium value; they may have some enclosure, or be affected by some man-made features, or have little inter-visibility with adjacent landscapes and exhibit a moderate density of sensitive landscape areas/features.
Medium – high sensitivity	These landscapes are likely to be of medium to high value, they may be open or exposed and have few man-made features. They are often inter-visible with adjacent landscapes and exhibit a moderate-high density of sensitive landscape areas/features.
High sensitivity	These landscapes are likely to be of high value, they may be open or exposed with a remote character and an absence of man-made features. They are often highly visible from adjacent landscapes and exhibit a high density of sensitive landscape areas/features.

Magnitude of landscape effects

3.1.17 Table 3 explains how criteria are applied to arrive at an understanding of magnitude and is derived from GLVIA 3.

Table 3
Criteria for the magnitude of landscape effects

Level	Typical Criteria
High	• Total loss of or major alteration to key features or perceptual aspects of the baseline and/or the addition of new features considered to be totally uncharacteristic when set within the attributes of the receiving landscape • The effects would be of a large scale influencing several landscape character types/areas • The effects would be long term and/or irreversible
Medium	• Partial loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that may be prominent but may not necessarily be considered to be substantially uncharacteristic when set within the attributes of the receiving landscape • The effects would be at the scale of the landscape character type/area within which the proposal lies • The effects would be medium term and/or partially reversible
Low	• Minor loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that may not necessarily be considered to be uncharacteristic when set within the attributes of the receiving landscape • The effects would be at the level of the immediate setting of the site • The effects would be short term and/or reversible
Negligible	• Very minor loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that are not uncharacteristic with the surrounding landscape - approximating the ' no change' situation • The effects would be at the site level, within the development site itself • The effects would be very short term and/or reversible

Overall level of the landscape effects

3.1.18 A consideration of the sensitivity of the landscape receptors to the development and the magnitude of the change resulting from the development, determines the overall level of the predicted impact. The relationship between sensitivity and magnitude to reach the level of effect is sometimes presented in the form of a matrix. However, such a matrix may lead to the same weighting of criteria, which might not always be appropriate and may lead to a formulaic approach, therefore descriptions of how the level of effect has been determined are provided (see paragraphs 3.34 and 3.35 of GLVIA 3).

3.1.19 Overall, effects may be adverse, neutral or beneficial, and are assigned a level on the scale: Imperceptible-Slight-Moderate-Substantial-Severe, taking into account

mitigation measures, and different stages of the project lifecycle. Table 4 assigns typical criteria to each level, as applied in this appraisal, however it should be noted that various different scenarios of susceptibility to change, landscape value, the size or scale, geographical extent and/or duration and reversibility of effects could apply to result in effects as described in the appraisal; therefore the criteria in Table 4 are provided as typical examples. Intermediate levels, such as slight to moderate and moderate to substantial, may also apply.

Table 4
Criteria for determining the overall level of landscape effects

Level	Typical criteria
Severe	The proposals are wholly out of character with the existing situation, both locally and on the wider scale, and/or the landscape receptors are of high sensitivity
Substantial	The proposals have a large effect within the context of the wider area, and/or the landscape receptors are of high sensitivity
Moderate	The proposals have a noticeable effect within the context of the wider area, and/or the landscape receptors are of medium sensitivity
Slight	The proposals have some, but only a limited effect within the mainly local context, and/or the landscape receptors are of low sensitivity
Imperceptible	The degree of change is so small as to have little or no effect, and/or the landscape receptors are of low sensitivity

Methodology for the appraisal of visual effects

3.1.20 As with landscape effects, a consideration of the sensitivity of visual receptors (people) and the magnitude of the change determines the level of the predicted effect on views and visual amenity.

3.1.21 The nature or sensitivity of the visual receptors considers their susceptibility to the type of change or development proposed and the value people attach to the affected views (GLVIA 3, paragraph 6.31).

3.1.22 The nature or magnitude of the effects on visual receptors depends upon the size or scale of the changes, the geographical extent of the area influenced, and the duration and reversibility of the effects. In visual assessment / appraisal, magnitude is also determined by the distance from the viewer, the extent of change in the field of vision, and the duration of activity apparent from each viewpoint, or from a sequence of points that may have transient views, for instance along a road.

Sensitivity of visual receptors

3.1.23 Visual receptors include the public or community at large, residents, visitors, workers and people travelling through the landscape. The types of viewers, the duration of the view and the importance of the view or views of and from valued areas define the sensitivity of a visual receptor.

3.1.24 In the context of this development, the scale of the sensitivity of the visual receptors is as outlined in Table 5 and is derived from GLVIA 3.

Table 5
Criteria for the sensitivity of visual receptors

Level	Typical criteria
High	• Users of outdoor recreational facilities including public rights of way, or visitors to heritage assets, country parks or other attractions whose attention or interest is focused on the landscape and where tolerance to change is likely to be low • Communities where the development results in changes in the landscape setting or valued views enjoyed by the community • Occupiers of residential properties with views affected by the development • Tourists travelling through or past the affected landscape in cars, on trains or other transport routes whose attention or interest is focused on the landscape and where tolerance to change is likely to be low
Medium	• People, such as commuters and hauliers (not tourists) travelling through or past the affected landscape in cars, on trains or other transport routes
Low	• People engaged in outdoor sport or recreation which does not involve or depend upon appreciation of views of the landscape • People at their place of work, or engaged in similar activities, whose attention may be focused on their work or activity, not their surroundings, and where setting is not important to the quality of working life • Views from urban roads, footways, railways and industrial areas whose attention may be focused away from the landscape and where tolerance to change is likely to be high

Magnitude of visual effects

3.1.25 Table 6 explains how criteria are applied to arrive at an understanding of magnitude and is derived from GLVIA 3.

Table 6 Criteria for the magnitude of visual effects	
Level	**Typical Criteria**
High	• Total loss of or major alteration to views and/or the addition of new features that would be very prominent, and/or would greatly contrast with the existing view • Full, open views, experienced for the majority of a journey or full duration of an activity • The views would be close, direct and/or totally occupied by the proposed development • The effects would be long term and/or irreversible
Medium	• Partial loss of or alteration to views and/or the addition of new features that would be prominent, and/or would contrast with the existing view • Partial views, experienced for part of a journey or activity • The views would be middle distance, partially oblique and/or partially occupied by the proposed development • The effects would be medium term and/or partially reversible
Low	• Minor loss of or alteration to views and/or the addition of new features that would not be prominent, and/or would not contrast with the existing view • Glimpsed views, experienced for a small part of a journey or activity • The views would be distant, oblique and/or only a small part of the view would be occupied by the proposed development • The effects would be short term and/or reversible
Negligible	• Very minor loss of or alteration to views and/or the addition of new features that would be almost imperceptible - approximating the ' no change' situation • Very brief glimpsed views • The views would be very distant, very oblique and/or only a tiny part of the view would be occupied by the proposed development • The effects would be very short term and/or reversible

3.1.26 Magnitude is influenced by the effects of distance, which can control how a solar farm is perceived, but how much of the solar farm is seen is also important. Whether the whole of the development is visible or just a small area influences the degree of change. The extent to which the development occupies the horizon is also a factor affecting its prominence. Magnitude can vary greatly in differing weather conditions. This appraisal has to take into account a worst-case scenario and the time duration it is experienced.

Overall level of the visual effects

3.1.27 As with landscape effects, a consideration of the sensitivity of the visual receptors to the development and the magnitude of the change resulting from the development, determines the level of the predicted impact. As noted above, a matrix is not used, descriptions of how the levels have been determined are provided.

3.1.28 Table 7 assigns typical criteria to each level for visual effects, as applied in this appraisal; however it should be noted that various different scenarios of susceptibility to change, the value of views, the size or scale, geographical extent and/or duration and reversibility of effects could apply to give rise to the effects as described in this appraisal; therefore the criteria in Table 7 are provided as typical examples, only. Intermediate levels, such as slight to moderate and moderate to substantial, may also apply.

Table 7
Criteria for determining visual effects

Level	Typical criteria
Severe	The proposals would dominate views and would be wholly out of character with the existing situation, the changes would be experienced by a very large number of people, and/or the visual receptors would be of high sensitivity to the changes.
Substantial	The proposals would be prominent and contrasting with the existing views, the changes would be experienced by a large number of people, and/or the visual receptors would be of high sensitivity to the changes.
Moderate	The proposals would be noticeable in views but not dominating, the changes would be experienced by a medium number of people, and/or the visual receptors would be of medium sensitivity to the changes.
Slight	The proposals would result in small changes to the views, the changes would be experienced by a small number of people, and/or the visual receptors would be of low sensitivity to the changes.
Imperceptible	The proposals would be imperceptible in views, the changes would be experienced by a very small number of people, and/or the visual receptors would be of low sensitivity to the changes.

Cumulative Impact Methodology

3.1.29 The guidance within chapter 7 of GLVIA 3 has been utilised in this assessment. This chapter paraphrases Scottish guidance, which defines cumulative effects as being:

> *"The additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments, taken together (SNH, 2012)"*

(GLVIA 3 para. 7.3, page 120)

3.1.30 GLVIA 3 comments that the baseline for assessing cumulative landscape and visual effects should include:

"…those schemes considered in the LVIA and in addition potential schemes that are not yet present within the landscape but are at various stages in the development and consenting process:

- *schemes with planning consent;*
- *schemes that are the subject of a valid planning application that has not yet been determined."*

(GLVIA 3 para. 7.13, page 123)

3.1.31 Accordingly such proposed schemes are included in the assessment of cumulative effects.

Cumulative Landscape Effects

3.1.32 GLVIA 3 states that:

"Cumulative landscape effects may result from adding new types of change or from increasing or extending the effects of the main project when it is considered in isolation."

(GLVIA 3 para. 7.19, page 124)

3.1.33 In addition, GLVIA 3 states that:

"The most significant cumulative effects on landscape character are likely to arise when two or more developments introduce new features into the landscape. In this way, they can change the landscape character to such an extent that they create a different landscape character type."

(GLVIA 3 para. 7.28, page 129)

3.1.34 This guidance has been utilised in the assessment of cumulative landscape effects.

Cumulative Visual Effects

3.1.35 GLVIA 3 states that:

"Cumulative visual effects are the effects on views and visual amenity enjoyed by people, which may result either from adding the effects of the project being assessed to the effects of the other projects on the baseline conditions or from the combined effect. This may result from changes in the content and character of the views experienced in particular places due to introduction of new elements or removal of or damage to existing ones."

(GLVIA 3 para. 7.29, page 129)

3.1.36 In addition, GLVIA 3 states that:

> *"The visual receptors will already have been identified and categorised in terms of their importance and sensitivity to change and these assessments will be unchanged unless new ones have been added specifically for the cumulative effects assessment. The magnitude of the visual effects may, however, be altered by the addition of the other developments and judgements must be made about this."*

(GLVIA 3 para. 7.36, page 130)

3.1.37 GLVIA 3 states that cumulative visual impact may occur as:

- Combined visibility – where two or more developments are visible from one viewpoint;
- Sequential effects – where the observer has to move between viewpoints to see different developments (e.g. assessed for travel along major transport routes).

3.1.38 This guidance has been utilised in the assessment of cumulative landscape effects.

Zone of Theoretical Visibility Mapping and Viewpoints

3.1.39 A desk based analysis was carried out to determine the bare ground zone of theoretical visibility (ZTV) of the proposed solar farm (Figure 1). Once this was established, a number of representative viewpoints were identified to illustrate the potential visual effects of the development (as shown on Figure 1). A series of photographs were taken from the representative viewpoints on the 12th May 2015 using a digital camera with an equivalent of a 50mm lens, mounted on a stable, levelled tripod with a professional panoramic head attached. This positions the focal centre of the camera lens above the pivot of the tripod and allows the photographs to be stitched together accurately using software (Appendix 1). The photographs illustrate views of potential receptors and show the site in the context of the surrounding landscape and settlements.

3.1.40 Each photoview includes the following information:

- a description of the location (receptor);
- the distance from the part of the application boundary closest to the viewpoint;

- a location map of the viewpoint;
- a description of the existing view, and those during construction and operation;
- descriptions of magnitude of effects and the sensitivity of the visual receptors;
- mitigation measures;
- status of effects (temporary, permanent, reversible, irreversible); and
- a summary of the potential effect (adverse or beneficial).

4 BASELINE

4.1 Landscape Character Baseline

4.1.1 This section firstly reviews the published landscape character and sensitivity studies relevant to the 5km study area. The site appraisal then sets out a description of the existing baseline condition of the area within the vicinity of the site.

Character of the 5km study area

4.1.2 National Character Areas have been developed by Natural England, and profiles of these areas are provided online[3]. In addition, county level character areas are described in Staffordshire County Council's Supplementary Guidance Document Planning for Landscape Change[4].

Natural England National Character Areas (NCAs)

4.1.3 There is one NCA located within the 5km study area (Figure 2).

4.1.4 The site is located within NCA 68 Needwood and South Derbyshire Claylands. The NCA profile describes it as follows:

> *"Needwood and South Derbyshire Claylands National Character Area (NCA), though divided by the River Dove's wide flood plain, is predominately a rolling plateau that slopes from the southern edge of the Peak District to the valley of the River Trent in the south-west. Also in the south are frequent plantations and ancient woodlands of the former Forest of Needwood. Elsewhere, the extensively hedged and pastoral landscape is dominated by mixed farming and features a dispersed pattern of villages and other settlements. Hedgerow trees also contribute to the wooded character of this NCA.*
>
> *Future challenges for the area include management of flooding, maintaining the character of the farmed landscape and settlements, safeguarding water quality, and expansion of woodlands and the restoration of existing wood pasture and parkland.*
>
> - *The area, which is dissected by the river systems of the Trent, the Blithe and the Dove, forms a rolling glacial till plateau that slopes*

[3]https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles

[4] Supplementary Guidance Document, Planning for Landscape Change, 1996-2011, Staffordshire County Council.

southeastwards from the southern edge of the Peak District to the valley of the River Trent. There is a distinctive scarp to the south of the Dove, whose broad flood plain divides the Staffordshire and Derbyshire elements…

- *…A predominantly pastoral landscape of rolling countryside that is still largely rural and relatively tranquil, featuring distinctive field boundary patterns and characteristic hedgerows with hedgerow trees. Grassland for livestock is the dominant land use although dairy and cereal farming are also important. The majority of the farms are small- to medium-sized dairying and livestock holdings. Arable cultivation occurs on the better land north and south of the Dove and in the river flood plains.*
- *An overall wooded character derived from scattered ancient and seminatural woods, parkland and boundary trees. Some large woodland blocks are prominent in Needwood Forest; however, much consists of smaller, fragmented remnants. There is new woodland creation within The National Forest.*
- *Predominantly hedgerow bounded, the field pattern varies from small to medium-sized fields to the north of the Dove; mostly large-scale and rectilinear on the broad river flood plains; strongly rectilinear in Needwood Forest; and smaller and more irregular to the west.*
- *A wide range of habitats associated predominantly with pasture, varying from damp lowland grassland and marshland to drier neutral grassland. There are good surviving examples of watermeadows featured along the three main river valleys. Areas of open water such as Blithfield Reservoir and the major rivers are important for birds. Chartley Moss (a basin mire) and Pasturefields (an inland salt marsh) are internationally important examples of rare habitats.*
- *Wood pasture and designed parklands, often with veteran trees, are found throughout the area. They are generally associated with landscape parks and country houses, such as Sandon, Sudbury and Kedleston. Tutbury Castle and the internationally important Derwent Valley Mills, together with a variety of features such as moated sites and medieval settlements and the Trent and Mersey Canal, add to the*

historical richness of this landscape. Extensive earthworks relating to ridge and furrow and watermeadow systems survive, particularly around the Dove.

- *A dispersed historical settlement pattern, particularly in the higher pastoral farmlands that fringe the Peak District to the north, with the older villages generally sited along the valleys or valley sides, and more recent crossroad settlements on the higher ground. Buildings are usually of red brick and clay tile roofs, and local sandstone. Timber frame buildings are rare with notable examples at Somersal Hall and the village of Abbots Bromley. There are market towns at Ashbourne, Stone, Tutbury and Uttoxeter, and the more significant urban areas of Burton-upon-Trent and the City of Derby extend into the eastern boundary of the NCA.*
- *The Trent and Dove valleys are major transport corridors. The Trent Valley includes the Trent and Mersey Canal, the West Coast Main Line railway and the A51 road, while the Dove Valley features the Derby to Stoke railway line and the A50 road. The A52 links Derby and Ashbourne."*

County level landscape character area

4.1.5 The site is located within one county level landscape character area, as identified within Staffordshire County Council's Planning for Landscape Change. The Riparian Alluvial Lowlands is described as follows:

"These riverine landscapes are characterised by their flat topography and visual links with landform and land uses of surrounding areas. The predominantly pastoral farming on the floodplain gives way to areas of arable cropping where this becomes possible due to the slight raising of the land levels.

The landscape is characterised by trees associated with waterside planting, with willow, alder and poplar predominating along the river, stream and dyke courses. Hedgerow pattern varies from predominantly irregular to small areas with straight hedgerows and a regular pattern. Hedgerows are intact and well

looked after mainly in the pastoral areas, whilst deterioration in other places is resulting in remnant hedgerows and extensive wire fences.

The landscape is predominantly of a medium scale with some areas of a smaller scale where increased tree cover prevents views and other areas, mainly linked to the introduction of arable farming, where the scale is increased. In these latter areas the flat even expanse of arable production is unrelieved by the few scattered remnants of hedgerow trees, not related to boundaries on the ground…

…Views across the landscape are variable: some areas appear well treed as a result of grown up thorn and extensive tree cover, whereas in the narrower valleys or open arable areas there is little to restrict through views. The surrounding rising land and woodland edges provide the only relief in these landscapes, with the river unseen and visually unimportant…

…Adjacent built up areas considerably change the character of the landscape where present, by visually dominating the landscape features. In these areas, pressures on the use of land for transport routes, power supply, sewage treatment and other typical land uses, e.g. for horse pasture, erode the character of a predominantly rural landscape."

4.1.6 Factors critical to landscape character and quality are:

"…the loss of characteristic landscape features; the poor condition of those features that remain; the poor survival of historic elements that contribute to landscape character, such as field, settlement and road patterns; the poor representation of characteristic semi-natural (i.e. riparian and wetland) vegetation, and, to a lesser extent, the introduction of the incongruous landscape features listed above."

4.1.7 The Staffordshire Biodiversity Action Plan Targets identifies the planting of species-rich hedgerows as medium priority.

4.1.8 The county boundary between Staffordshire and Derbyshire corresponds with the River Dove and splits the area in two. The study area therefore also comprises the Lowland Village Farmland and the Washlands Riverside Meadows county level landscape character areas as identified within The Landscape Character of

Derbyshire[5]. These areas have comparable features to that of the Riparian Alluvial Lowlands.

4.1.9 The Settled Plateau Farmlands Slopes is a county level landscape character area located to the south of the study area in a belt that extends from west to east. The key characteristics of the area are as follows:

> *"Hedgerow oak and ash trees; broadleaved and conifer woodlands; irregular hedged field pattern; narrow lanes and hedge-banks; old villages and hamlets; small streams and field ponds; manors and parkland; undulating, sloping landform."*

4.1.10 A variety of other county level landscape character areas are located within the study area, however given the restricted visibility of the site from these areas they would remain unaffected by the proposed development.

4.1.11 The assessment concluded that the site and surrounding area is generally of a rural character. Topography within the immediate area of the site is generally flat, however much higher, steeper topography is located to the south and north of the 5km study area. The study area is a largely agricultural landscape dominated by mixed farming. The field pattern is irregular and largely small to medium scale. Fields tends to be bounded by hedgerows which adds to the apparent wooded nature of the area which largely restricts the availability of long distance views. Overall, there is a distinct rural character and relative tranquillity which remains despite the adverse impacts of major transport routes and the expansion of market towns within the study area.

Planning Policy

East Staffordshire Local Plan 2006 - Saved Policies

4.1.12 Policy BE1 – Design states that planning permission will only be granted for:

> *"applications for development which respond positively to the context of the area surrounding the site of the application and in themselves exhibit a high quality of design which corresponds to or enhances surrounding development. Such considerations will apply equally to new development and development which involves the re-use of existing buildings. In considering whether design*

[5] The Landscape Character of Derbyshire, Derbyshire County Council (2003)

of development proposals is satisfactory, the Borough Council will have regard to the following factors:

(a) The layout of the development in terms of its circulation routes and arrangement of buildings and how they relate to such factors in the surrounding area.

(b) How elements of any open spaces, both hard and soft, in the proposed development relate to each other, the proposed buildings, the characteristics of the site and the surrounding landscape character and appearance.

(c) The density and mix of the development in relation to its context and the uses to which the development will be put.

(d) The massing of the development in terms of the shape, volume and arrangement of the building or buildings in relation to the context of the development.

(e) How the height of the proposed development relates to the height of surrounding development and any vistas, views or skylines.

(f) What materials will be used within the development and how they interrelate with each other, their immediate context and any traditional materials used in the area.

(g) The detailing and construction techniques to be used in the development and how they interrelate with each other, and relate to the immediate and overall context.

(h) Adverse impacts on the immediate and general environment in terms of emissions and other impacts and any use of techniques or mechanisms to reduce those impacts.

(i) The extent to which the design of the development takes into account the safety of users and reduces the potential for crime to occur in accord with s. 17 of the Crime and Disorder Act 1998.

Designated areas and sensitive receptors

4.1.13 Designated areas and sensitive receptors within the 5km study area are shown in Figures 3 and 4; including Sudbury Hall National Register of Park and Gardens and National Trust Ownership Area, Sites of Specific Scientific Interest (SSSIs), Scheduled Monuments (SMs) and Grade 1 Listed Buildings.

National Register of Park and Gardens and National Trust Ownership Area

4.1.14 Sudbury Hall National Register of Parks and Gardens and Sudbury Hall National Trust Ownership Area are approximately 1.25km north-east of the site at the closest point. Visitors to these sites are considered high sensitivity receptors. The site is located within the ZTV; however views would be screened by intervening vegetation. Therefore Sudbury Hall National Register of Parks and Gardens and Sudbury Hall National Trust Ownership Area would be unaffected by the development.

Site of Specific Scientific Interest

4.1.15 Forest Banks and Newton-le-Willows SSSIs are approximately 2.5km south west of the site at its closest point. Visitors to these sites are considered to be high sensitivity receptors. Newton-le-Willows SSSI is located outside of the ZTV and would therefore be unaffected by the development. The northern edge of the Forest Banks SSSI is located within the ZTV, however views would be screened by intervening vegetation and existing built development. Therefore the Forest Banks SSSI would be unaffected by the development.

Scheduled Monuments

4.1.16 There are seven SMs located within the 5km study area:

- Hodge Lane Manor, a moated site with fishponds and associated closes, is approximately 3.9km south-west of the site at its closest point.
- Tinker's Lane, a moated site, is approximately 4.2km south-west of the site at its closest point.
- The standing cross in the churchyard of St Peter's Church, is approximately 4.2km to the north of the site at its closest point.
- Bowl Barrow on Toot Hill, is approximately 4.4km west of the site at its closest point.

- Two Bowl Barrows, is approximately 4.7km north of the site at its closest point.
- Newborough Hall, a moated site with a millpond, two fishponds and connecting channels, is 4.8km south of the site at its closest point.
- Woodend moated site is approximately 4.9km to the south-west of the site at the closest point.

4.1.17 Only Bowl Barrows is located within the ZTV, however intervening vegetation and built development would screen views. Therefore, the SMs would be unaffected by the development.

Grade 1 Listed Buildings

4.1.18 Three Grade 1 Listed Buildings are located within the 5km study area:

- Sudbury Hall is approximately 1.4km to the north-east of the site at its closest point.
- The Church of St. Cuthbert, is approximately 4.4 to the north-west of the site at the closest point.
- The Hall is approximately 4.3km to the north of the site at its closest point.

4.1.19 None of the Grade 1 Listed Buildings are located within the ZTV, therefore they would be unaffected by the development.

The character of the site and its immediate vicinity

Settlements and individual properties

4.1.20 The site is located to the east of Marchington. The settlement comprises a number of private dwellings, farmsteads and industrial developments. The closest properties to the site include those located on Green Lane, The Square and Church Lane.

4.1.21 The nearest town is Uttoxeter, approximately 5.2km to the west of the site at its closest point. At the closest point, Tutbury is approximately 5.9km to the east of the site, while Hatton is approximately 5.5km to the east of the site.

4.1.22 The village of Sudbury is approximately 1.4km north-east of the site at its closest point, the village of Aston is approximately 1.8km to the north-east of the site at its closest point and the village of Doveridge is 3.4km to the north-west of the site. At the closest

point the village of Draycott in the Clay is 2 km to the south-east of the site, while the village of Hanbury is 3.5km to the south-east of the site.

Landform

4.1.23 The topography of the study area is generally characterised as undulating and is illustrated by Figure 5. The elevation of the site is around 70mAOD and this elevation remains fairly constant within the immediate vicinity of the site. This results from the flood plain of the River Dove and comprises a band of relatively flat topography that extends from the north-west of the study area to the east. Outside of this flood plain, topography to the north, south and west of the site is of much higher elevations of up to approximately 150mAOD. In particular, an east to west ridge is located to the south of the study area which affords long distance views towards the site.

Land cover and land use

4.1.24 The site is currently pasture land and is bounded by mature hedgerows. The land use and land cover of the study area consists largely of agricultural use, with mixed farming prominent. There are numerous scattered villages and communities within the study area, which are predominately rural in character. However, development associated with the larger market towns, major transport routes and industrial development within the study area, detract from this rural character. The remainder of the study area is characterised by large woodland belts.

4.1.25 There is a large amount of tree cover within the immediate vicinity of the site which is in keeping with the landscape character of the area. There are numerous areas of designated Ancient Woodland within the study area as illustrated on Figure 3.

4.1.26 East Staffordshire Borough Council's website[6] was consulted in order to identify the presence of current Tree Preservation Orders (TPOs) within or adjacent to the site. No TPOs were identified within or adjacent to the site.

4.1.27 The A50 extends west to east across the study area and is approximately 1.7km north of the site at its closest point. This dual carriage way connects Stoke-on-Trent to Derby. Whilst the majority of the dual carriageway is located within the ZTV, intervening vegetation and built development screen views. The A515 is located 1km

[6] http://mapping.eaststaffsbc.gov.uk/estaffs-client/

to the east of the site at its closest point. It extends from the roundabout on the A50 to the north of the site south towards Lichfield.

4.1.28 The B5017 (Stubby Lane) is approximately 1.5km south of the site at its closest point. It extends from Uttoxeter in the west and adjoins the A515 to the south of the site. Whilst sections of the road to the south of the site are located within the ZTV, intervening vegetation and existing built development screens views.

4.1.29 There are numerous local roads in the area, connecting the small settlements within the study area. Green Lane is located immediately to the west of the site and connects The Square to footpath Marchington 44. Moreton Lane (Houndhill) is located 0.4km south-west of the site at its closest point and links Church Lane and Silver Lane to the A515.

4.1.30 There are many other local roads within the study area, however, the majority of these roads are located outside of the ZTV. Where they are located in the ZTV intervening vegetation and existing built development screens views. As a result these roads would not be affected by the development.

4.1.31 The Crewe to Derby Railway line is located 70m north of the site at the closest point. While the railway line is located within the ZTV, intervening vegetation generally screens views. As a result the transport route would be unaffected by the development.

4.1.32 There are a number of footpaths and bridleways within the area, which provide a network of routes that link with the minor roads in the area. While many of these are located within the ZTV a combination of intervening vegetation and built development screen views. Therefore, the majority of footpaths within the study area would be unaffected by the development.

4.1.33 Route Number 549 The Les Sims Way and an area of Open Country and Registered Common Land to the north of Hanbury are located within the ZTV. However, a combination of intervening vegetation and built development screen views from these locations, therefore they would be unaffected by the development.

4.1.34 The access network within the study area is shown on Figure 6.

4.2 Visual Baseline

4.2.1 The visual envelope of the existing site is generally defined by:

- High topography to the north, south and west;

- Marchington Woodlands to the south; and
- Areas of woodland, hedgerows and hedgerow trees within the study area.

4.2.2 The ZTV for the site is shown on Figure 1. This has been developed using bare ground topography, so does not take into account the screening provided by vegetation and built development. Figure 1 shows that the theoretical visibility of the development extends across the majority of the northern half of the study area, while theoretical visibility of the development is restricted within the southern half of the study area. Theoretical visibility extends across the settlements of Aston, Coton in the Clay, Doveridge, Foston, Marchington, Moreton, Oaks Green, Scropton and Sudbury and parts of Draycott in the Clay, Hanbury and Somersal Herbert. In reality, the presence of intervening vegetation and built development would restrict visibility of the scheme to the site and the immediate vicinity.

4.2.3 Long distance views are restricted due to the abundance of dense vegetation within the study area.

5 APPRAISAL OF EFFECTS

5.1 Appraisal of Landscape Effects

5.1.1 The main impacts that would affect the landscape character of the site and the surrounding area as a result of the proposed solar farm are identified as:

- the construction of the solar farm;
- the installed solar panels across the site;
- the inverter stations;
- the grid connection via a substation;
- the site access; and
- the surrounding security fence.

5.1.2 The impacts would be affected by the proposed timescales for the project. Impacts are reported with the proposed mitigation measures, as set out below, assumed to be in place.

Landscape sensitivity to the proposed development

5.1.3 The landscape value of the site and the immediate surrounding area is assessed as medium it is representative of the landscape character area but not subject to any landscape designations. The overall sensitivity of the site and the surrounding landscape with potential views of the scheme is considered to be low to medium as the surrounding vegetation significantly reduces the scope of inter-visibility within the surrounding area. In addition, the site and its immediate surroundings are negatively affected by a number of man-made features such as the A515, the Crewe to Derby railway line, electricity transmission towers and H.M. Prison Dovegate are in the immediate vicinity of the site. However, it should be noted that a number of trees are located within the southern section of the site, which are characteristic of the study area.

Potential landscape effects during construction

5.1.4 The construction vehicles would not affect the physical characteristics of the area but would affect the perceptual characteristics, due to the increased number of vehicles and movement within the site and its surroundings. Construction of a new access track within the site would lead to a small loss of land. The storage areas and stockpiles of construction materials would introduce new elements, temporarily impacting upon

the rural character of the site. In addition trees within the southern section of the site would be lost to development.

5.1.5 During the construction phase of the development, the magnitude of the landscape effect on the site and surrounding landscape is assessed as high; effects would be on a receptor of low to medium sensitivity (as mentioned above) and the overall landscape effect is assessed as **moderate to substantial adverse** (short term) for the area within and immediately adjoining the site. Impacts would reduce quickly with distance from the site and effects in the wider landscape character area would be **imperceptible adverse**.

Potential landscape effects during operation

Land use and Land Management

5.1.6 The site is currently managed as pasture. The proposed solar farm would introduce a new land use, however once operational the land will be used for grazing allowing continued use as pasture. The magnitude of impact on the land use and land management of the site and the immediate surroundings is assessed as medium; the overall effects on the landscape character of the site and surrounding area are assessed as **slight to moderate adverse** for the area within and immediately adjoining the site. Impacts would reduce quickly with distance from the site and effects in the wider landscape character area would be **imperceptible adverse**.

New buildings / structures

5.1.7 The solar panels and associated buildings would introduce new incongruous features and structures, creating a strong new pattern which would add a different texture and colour to the existing landscape, causing a potentially adverse. The access tracks would introduce a new pattern but would not affect the scale of the landscape. The grid connection is underground; therefore once the cables have been laid and the ground cover is restored there would be no operational impacts associated with this aspect of the proposed development.

5.1.8 The magnitude of the effects of the new buildings/structures on the landscape character of the site and the immediate surroundings is assessed as medium due to the presence of major transport routes of the A515, the Crewe to Derby railway line and the adjacent H.M. Dovegate Prison. Therefore the overall level of effects on the landscape character of the site and surrounding area is assessed as **slight to moderate**

adverse. Impacts would reduce quickly with distance from the site and effects in the wider landscape character area would be **imperceptible adverse**.

Landscape Features

5.1.9 Notable landscape features within the site and immediate surroundings are the boundary hedgerows and hedgerow trees within and surrounding the site. Vegetation within the site will be retained where possible, however a number of trees are located within the southern section of the site which are likely to be removed as part of the development. Vegetation on the boundary of the site will be retained and enhanced, while vegetation within the immediate vicinity of the site would be unaffected by the development. Consequently, the magnitude of effects is assessed as medium to high, as a result the effect on this aspect of landscape character is assessed as **moderate adverse**. This adverse impact would be offset by the planting of additional trees along the north-eastern boundary of the site as shown within the landscape plan (Figure 7).

Lighting

5.1.10 There is no requirement to light the solar panels overnight for security as all security cameras would be fitted with infra-red lighting or similar, therefore the impacts of this is assessed as negligible. There is likely to be one small light above the door of the substation, however this will have an **imperceptible adverse** impact.

Overall operational effects on landscape character

5.1.11 Overall, the effects of the operational solar farm on the landscape character of the site and immediate surrounding area are assessed as **slight to moderate adverse**. The landscape character of the site would be altered by the presence of the solar farm, but hedgerows and hedgerow trees on the boundary of the site would be retained and enhanced. The new buildings/infrastructure would not be in keeping with the character of the surrounding area, however boundary vegetation screens and reduces the magnitude of landscape impact. Impacts would be restricted to the immediate vicinity of the site given that visibility of the site is reduced by the abundance of dense vegetation within the study area.

Potential impacts upon landscape character after decommissioning

5.1.12 The solar farm would have an operational lifespan of approximately 25 years, at the end of which it would be dismantled and the site restored to agricultural land. The actual removal of the solar farm's structures and infrastructural facilities at

decommissioning would result in some temporary construction impacts but, once this is complete, there would be no adverse residual effects on the site or its setting. Overall, and following decommissioning, there would be a net benefit to local landscape due to enhanced hedgerows and tree planting that will enhance landscape character.

5.2 Appraisal of visual effects

5.2.1 The following table, Table 8 describes the main visible components of the proposed development, with a summary of the predicted effects and potential mitigation measures that can be implemented in order to reduce, remove or offset the level of effect.

Table 8
Visible component features of the development

Component	Predicted effect	Mitigation
Construction		
Construction vehicle movement	The increase in activity for a short time and temporary increase in amount of visual clutter would not exceed the capacity of the area to absorb these.	Vehicle movements would be kept to a minimum.
Installation of the solar panels and associated structures and infrastructure	Construction impacts would be temporary. The full extent of construction activities would only be visible from the edges of the site; and impacts would reduce with distance and time.	Vegetation on the boundary of and within the site would be retained and enhanced.
Operation		
The completed solar farm	The full extent of the solar farm would only be visible from the edges of the site; and impacts would reduce with distance. The panels would be a maximum height of 3m, they would be matt dark blue in colour and not reflective. Impacts would not be experienced beyond a 2km radius from the site.	Vegetation on the boundary of and within the site would be retained and enhanced.
The associated structures and infrastructure	The associated structures would not be of a significantly larger scale than the panels themselves. The infrastructure would consist of underground cables and there is limited requirement for on site access tracks	Vegetation on the boundary of and within the site would be retained and enhanced.
Site access	Existing field accesses would be used therefore impacts would be imperceptible.	Boundary vegetation would be retained and enhanced.
Decommissioning		

Table 8 Visible component features of the development		
Component	**Predicted effect**	**Mitigation**
Restoration	The solar panels and associated structures and infrastructure would be dismantled and removed from site leaving no residual impacts.	N/A

Potential visual effects during construction

5.2.2 Table 8 identifies possible visual effects during construction. Visual impacts are assumed to be adverse during the construction phase, but would be temporary.

Potential visual Impacts during operation

Residential receptors

5.2.3 These comprise individual and groups of properties, all of which are considered high sensitivity receptors from ground floor windows and medium sensitivity from upper floor windows.

5.2.4 There would be oblique upper storey views of the development from Brandon's Poultry Farm. Views would be less open than the close proximity views in Photoview 1. The sensitivity of effects is assessed as medium due to views being available from upper floor windows. The magnitude of effects is assessed as negligible given that vegetation on the boundary of the site generally screens views. Therefore the overall level of visual effects is assessed as **imperceptible adverse**.

5.2.5 There would be ground floor views of the development from some properties on Moreton Lane (Houndhill). Views would be available from three properties that are located to the south-west of H.M. Dovegate Prison and on the northern edge of Moreton Lane. Views would be similar to the middle distance views in Photoview 2. The sensitivity of effects is assessed as high due to views being available from the ground floor. The magnitude of effects is assessed as negligible given that vegetation on the boundary of the site and existing built development generally screens views. Therefore, the overall level of visual effects is assessed as **imperceptible adverse**.

5.2.6 There would be upper floor views of the development from some properties on Moreton Lane (Houndhill). Views would be available from three properties that are located to the south-west of H.M. Dovegate Prison and on the northern edge of Moreton Lane. Views would be similar to the middle distance views of Photoview 2. The sensitivity of effects is assessed as medium due to views being available from the

upper floor. The magnitude of effects is assessed as negligible given that vegetation on the boundary of the site and existing built development general screens views. Therefore, the overall level of visual effects is assessed as **imperceptible adverse**.

5.2.7 There would be ground floor and upper storey views of the development from properties on the A515 immediately to the south of the Crewe to Derby railway line. Views would be less open than the far distance views in Photoview 3. The sensitivity of effects is assessed as high from ground floor windows and medium from upper floor windows. The magnitude of effects for both the ground floor and upper floor is assessed as negligible due to intervening vegetation generally screening views. Therefore the overall level of visual effects is assessed as **imperceptible adverse**.

Transport and rights of way network

5.2.8 These include roads and public rights of way (Figure 6) within the 5km study area and within the ZTV (Figure 1). Public Rights of Way are assessed as being of high sensitivity and roads are assessed as being of medium sensitivity. Effects would be intermittent for some routes where the roads and paths cross areas of potential inter-visibility.

5.2.9 Green Lane is a local road that links The Square to footpath Marchington 44. There would be views of the development from two short 20m sections of the road adjacent to the site access points on Green Lane. Views would be similar to the close proximity view of Photoview 1. The sensitivity of visual receptors of this road are considered to be medium. The magnitude of effects is assessed to be high as open, close proximity views are available from the sections of the road highlighted above. Therefore, the overall level of visual effects is assessed to be **substantial adverse**. From other locations on this road, intervening vegetation will generally screen views, therefore the overall level of visual effects will not exceed **imperceptible adverse**.

5.2.10 Moreton Lane (Houndhill) is a local road that links Uttoxeter to the A515. Photoview 2 illustrates the middle distance views that are available from this road. Middle distance views are available from a 200m section of the road to the west of Houndhill House. The sensitivity of visual receptors of this road are considered to be medium. The magnitude of effects is assessed to be negligible as views are generally screened by intervening vegetation and existing built development. Therefore the overall level of visual effects is assessed as **imperceptible adverse**.

5.2.11 The A515 is a road that links the A50 to Lichfield. Photoview 3 illustrates the middle distance views that are available from this road. Far distance views are available from

a 200m section of the road to the south of where the A515 crosses the Crewe to Derby railway. The sensitivity of visual receptors of this road are considered to be medium. The magnitude of effects is assessed to be negligible given that intervening vegetation generally screens views. Therefore, the overall level of visual effects is assessed to be **imperceptible adverse**.

5.2.12 Footpath Draycott in the Clay 3 links the A515 to Footpath Draycott in the Clay 2. There would be views of the development where the footpath adjoins the A515. Views from this footpath would be similar to the far distance views of Photoview 3. Users of this footpath are considered to be of high sensitivity. The magnitude of effects is assessed as negligible due to intervening vegetation generally screening views. Therefore, the overall level of visual effects is assessed as **imperceptible adverse**.

5.2.13 Footpath Hanbury 4 links Hanbury to Coton Lane. There would be views of the development for a short section of the footpath near Rough Hays. Photoview 4 illustrates the long distance views available from this section of the footpath. Users of this footpath are considered to be of high sensitivity. The magnitude of effects is assessed as negligible due to intervening vegetation generally screening views. Therefore, the overall level of visual effects is assessed as **imperceptible adverse**.

5.2.14 Views of the solar farm from other transport routes and public rights of way within the study area would be screened by intervening vegetation, existing built development and changes in topography. Long distance views of the site from the high topography that has been identified within the south of the study area would be screened by intervening vegetation and existing built development. Therefore the level of visual effects would not exceed **imperceptible adverse**.

Potential visual effects after decommissioning

5.2.15 The actual removal of the solar panels and the associated above ground structures and infrastructural facilities at decommissioning would result in some temporary impacts, but once the solar panels are dismantled the site would be restored and the long term visual impacts caused by their presence would no longer remain.

6 MITIGATION

6.1.1 Mitigation measures are required in order to avoid, reduce, remedy or compensate for any adverse effects of the development. The principle of mitigation commences with the design of the development and is an iterative process, in that measures are taken, wherever possible, to adjust the design to minimise adverse effects. This has already been undertaken by locating the solar farm on land where views are largely restricted by the existing landform and vegetation that significant limits the visibility of the scheme to the site and immediate surrounding area. Mitigation has been incorporated into the design of the solar farm; temporary compounds, substation, inverters/transformers and access tracks are located near existing screening vegetation. No further mitigation measures have been proposed for visual effects given the low level of visual impacts that the scheme would give rise to. However, additional tree planting is proposed along the north-eastern boundary of the site to compensate for the landscape effects arising from tree removal in the southern section of the site. See Figure 7 for proposed mitigation measures.

7 RESIDUAL EFFECTS

7.1.1 Mitigation in the form of the enhancement of existing vegetation and additional planting will further reduce visual impacts over time. In addition it will lead to positive effects on the landscape character in the longer term following decommissioning.

8 CUMULATIVE IMPACTS

8.1.1 The potential cumulative impacts have been assessed with regard to the proposed development and the following schemes:

- A solar farm at Aston House Farm, Sudbury; approximately 2.5km north-east of the site.
- A solar farm within the planning process on land north of Moreton Lane, Draycott in the Clay; immediately to the east of the site.
- A solar farm within the planning process on land south of Moisty Lane, Marchington; approximately 2.8km west of the site at the closest point.

- A solar farm within the planning process to the south- east of The Willows, Uttoxeter; approximately 4.2km to the north-west of the site at the closest point.

8.1.2 The proposed solar farm at Aston House Farm is located within the ZTV and can be seen to the right of Photoview 4 in the far distance. Long distance views of the solar farm at Aston House Farm are available from this location. The scheme at Aston Farm House in isolation would lead to an **imperceptible adverse** effect. As a result, the proposed development in combination within the scheme at Aston House Farm would lead to an additional **imperceptible adverse** cumulative effect (in combination view).

8.1.3 The proposed solar farm off Moreton Lane is located within the ZTV and would be visible to the centre of Photoview 3 in the middle distance. The proposed solar farm off Moreton Lane would completely screen the proposed scheme off Green Lane and therefore would not give rise to adverse cumulative impacts in combination or sequential views from the A515.

8.1.4 The remaining schemes listed above would not give rise to adverse cumulative impacts on the landscape character or visual amenity of the area in combination with the proposed development off Green Lane due to the presence of intervening vegetation and built development between the sites leading to a lack of inter-visibility.

8.1.5 No further large scale solar farms, either existing or in the process of planning, have been identified within the study area.

9 LIMITATIONS OF STUDY

9.1.1 All viewpoints were at publically accessible locations. Therefore effects on residential receptors were estimated using similar views in close proximity to the properties.

10 CONCLUSION

10.1.1 The study has been carried out in line with the requirements of good practice guidance and methodology.

Landscape effects

10.1.2 The effects of the construction of the solar farm on the landscape character of the site and immediate surrounding area are assessed as **moderate to substantial adverse**,

decreasing to **slight to moderate adverse** during operation. The landscape character of the site would be altered by the presence of the solar farm, but hedgerows and hedgerow trees on the boundary of the site would be retained and enhanced. The new buildings/infrastructure would not be in keeping with the character of the surrounding area, however boundary vegetation screens and reduces the magnitude of landscape impact. Impacts would be restricted to the immediate vicinity of the site given that visibility of the site is reduced by the abundance of dense vegetation within the study area.

Visual effects

10.1.3 The ZTV (Figure 1) shows that the theoretical visibility of the development extends across the majority of the northern half of the study area, while theoretical visibility of the development is restricted within the southern half of the study area. However this is based on bare ground topography, in reality the dense vegetation within the study area significantly restrict the visibility of the site. The range of visual receptors (properties, settlements, users of the transport network and designated areas) has been assessed. **Substantial adverse** impacts would be restricted to two short sections of Green Lane. With the exception of this visual receptor the proposed solar farm would result in visual impacts that would not exceed **imperceptible adverse**.

Cumulative effects

10.1.4 The proposed solar farm would give rise to additional cumulative impacts that would not exceed **imperceptible adverse**.

Residual effects

10.1.5 The solar farm is designed to be of a temporary nature, lasting approximately 25 years, which at the end of its life would be dismantled and the site restored to agricultural use. Therefore there would be no residual adverse visual effects and there would be a positive effect on landscape character following decommissioning as a result of enhancement of existing vegetation and additional planting.

Overall

10.1.6 The proposed solar farm at land off Green Lane is considered as acceptable in terms of its overall effects on landscape character and visual amenity. This appraisal has concluded that the highest level of impacts incurred as a result of the development would be limited to receptors immediately adjacent to the site. Elsewhere impacts would not exceed **imperceptible adverse**.

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