

LVIA Assessment Approach

Methodology

The following is an overview of the methodology used in identifying the likely significance of effects arising from the impact of the Proposed Development. Generally, the methodology adopted is in line with best practice for the production of LVIA's based on the Guidance for Landscape and Visual Assessment - Third Edition produced by the Landscape Institute and Institute of Environmental Management and Assessment (GLVIA3). The guidance offers clarification on use of terms within LVIA's and within this assessment we have adopted the suggested definitions on the terms impact and effects:

"The third edition attempts to be clearer on the use of terminology. The emphasis should be on the identification of likely significant environmental effects, including those that are beneficial and adverse, direct and indirect, long, medium and short term and reversible and irreversible, as well as cumulative effects. This edition encourages professionals to recognise this and assess accordingly." (Preface to GLVIA3).

In this section, the following distinction is made between landscape and visual effects:

- Landscape effects are defined as physical changes in the fabric, character and quality of the landscape as a result of the Proposed Development;
- Visual effects are defined as changes in quality of the views of the landscape and changes to visual amenity as a result of the Proposed Development and the effects of those changes on the perceptions of visual receptors when experienced from available viewpoints.

GLVIA3 also states under the heading impacts, effects and significance that:

"Terminology can be complex and potentially confusing in this area, particularly in the use of the words 'impact' and 'effect' in LVIA within EIA and SEA. The process is generally known as impact assessment, but the European Union Directive refers to assessment of the effects, which are changes arising from the development that is being assessed. This guidance generally distinguishes between the 'impact', defined as the action taken, and the 'effect', defined as the change resulting from that action, and recommends that the terms should be used consistently in this way." (GLVIA3, para 1.5)

This LVIA chapter therefore considers the Proposed Development as the impact and the changes that occur to the baseline condition of the landscape and visual amenity as a result of the development as being the effects.

Assessment of Significance Criteria

Significance is a function of the combination of the sensitivity of a receptor (or the receiving environment) and the magnitude of change to produce the potential effect. The significance is judged based on the degree of change that will occur on the receptor. Further details on the factors that should be considered in the assessment of significance are presented below.

Significance Criteria for Landscape Effects

To successfully assess the significance of landscape effects requires the consideration of the nature of the landscape receptors, also known as sensitivity, and the nature of the effect, also known as magnitude of change, that the Proposed Development will have on the receptor.

The nature of the receptor should be assessed in terms of the value of the receptor and its susceptibility to the particular change caused by the type of proposed development. The change, or nature of effect is measured in terms of scale, size, geographical coverage, duration and reversibility.

The landscape receptors that have been assessed at the three stages (Construction, Operation and Decommission) are some or all as follows:

- Site
 - Topography, soils and geology
 - Land Use
 - Woodland and Trees
 - Field Pattern
 - Landform
 - Footpaths and Bridleways
 - Roads and Tracks
 - Buildings
 - Water

- Site Setting
 - North
 - South
 - East
 - West

- Broad Landscape Context
 - National character areas – National Character Area (NCA) 68. Needwood and South Derbyshire Claylands;
 - County Landscape Character Area – Staffordshire are published in Planning for Landscape Change: Supplementary Planning Guidance to the Staffordshire and Stoke on Trent Structure Plan 1996 - 2011 Landscape Descriptions – Landscape Character Type Settled Plateau Farmland;
 - District Landscape Character Area – Landscape and Settlement Character Assessment (LSCA) 2008 - LCT Settled Plateau Farmland.

Nature of Receptor (Sensitivity)

GLVIA3 recommends that the landscape receptors need to be assessed firstly in terms of their sensitivity, which is a combination of the value of the landscape and the susceptibility to change. Susceptibility is: *“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 a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue circumstance for the maintenance of the baseline situation and / or the achievement of landscape planning policies and strategies.”* (GVLA3 Page 88; Para 5.40)

Furthermore, the GLVIA3 indicates in the Glossary that susceptibility is “the ability of a defined landscape or visual receptor to accommodate the specific proposed development without undue negative consequences.” (GLVIA Page 158). Judgements on the susceptibility of the receptor to change are recorded as high, medium or low (Page 89; Para 5.43). A description of how susceptibility is evaluated for each receptor type is included in GLVIA3 (para 5.40) and outlined below:

- **High** – undue consequences are very likely to arise from the Proposed Development;

- **Medium** – there could be some undue consequences arising from the Proposed Development; and
- **Low** - undue consequences are unlikely to arise from the Proposed Development.

The value of a landscape is established through the baseline study based on review of:

- The value of the Landscape Character Types or Areas that may be affected;
- Individual contributors to landscape character, especially the key characteristics, which may include individual elements of the landscape, particular landscape features, notable aesthetic, perceptual or experiential qualities, and combinations of these contributors.

Within this chapter we have considered the value at national and regional/local level.

Landscape Value is “**the relative value that is attached to different landscapes by society**” (GLVIA3, Glossary page 157). The following is an example of how the value would be rated on a range of landscapes:

- **High** - National/International – Designated landscapes which are nationally or internationally designated for their landscape value, including National Parks, Areas of Outstanding Natural Beauty, World Heritage sites, Heritage Coast and National Scenic Areas;
- **Medium High** - Local – Locally or regionally designated landscapes (e.g. Area of High Landscape Value, Regional Scenic Areas); also areas which local evidence indicates as being more valued than the surrounding area;
- **Medium** - Community – ‘everyday’ landscape which is appreciated by the local community but has little or no wider recognition of its value;
- **Low** – despoiled or degraded landscape with little or no evidence of being valued by the community.

However, it should be noted that the value of landscapes is complex, and the actual scale of relative value will be made clear in the main body of the assessment.

GLVIA3 states “Judgements about susceptibility of landscape receptors to change should be recorded on a verbal scale (for example high, medium or low), but the basis for this must be clear, and linked back to evidence from the baseline study.” (Page 89; Para 5.43)

Judgements on the sensitivity of the receptor are recorded as high, medium or low and combine the value of the landscape with the susceptibility to change and the final opinion is made by professional judgement of the assessor making reference to the criteria tables.

Nature of Effect (Magnitude of Change)

Each effect on landscape receptors will need to be assessed in terms of its size or scale; the geographical extent of the area influenced; and its duration and reversibility. In terms of size or scale, judgements are made to determine the extent of the changes in the landscape that is likely to be experienced by each effect.

For landscape types and areas, the scale or size depends on the degree to which the character of the landscape is changed through the removal of the existing landscape components, or the addition of new components. For landscape features and elements, it depends on the extent of these that will be lost or changed, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape.

Within this chapter the size / scale will be described as Major, Moderate, Minor or Imperceptible as advised in GLVIA3 (Para 5.49). These are defined further below with examples applied based on professional judgement:

- **Major** – Total or distinctive alteration to key elements, features, qualities or characteristics, such that post development, the baseline situation will be fundamentally changed;
- **Moderate** – Partial alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be noticeably changed;
- **Minor** – Small alteration to key elements, features, qualities or characteristics, such that post development the baseline situation will be largely unchanged despite discernible differences;
- **Imperceptible** – A change that is barely noticeable or cannot be perceived.

The GLVIA3 (Para 5.50) recommends that the geographical extent of the likely effects on the landscape be measured as follows:

- At site level, within the development;
- At the immediate setting of the site;

- At the broader landscape context of the site i.e. at the local landscape character type / area and also on a larger scale where several landscape types or character areas are potentially affected.

This approach has been adopted for this assessment as it also tests the likely significance of effects for various stages of the Proposed Development, such as the set up/preparation at the construction stage, operational stage and the decommissioning stage. Mitigation measures are then considered, and a further assessment has taken place which considers the likely residual effects after mitigation is applied.

Duration of effect is assessed for all landscape and visual receptors and identifies the period over which the change to the receptor as a result of the development would arise. It is rated on the following scale:

- **Permanent** – the change is expected to be permanent and there is no intention for it to be reversed;
- **Long-term** – the change is expected to be in place for 10-25 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe;
- **Medium-term** – the change is expected to be in place for 5-10 years and will be reversed, fully mitigated or no longer occurring beyond that timeframe;
- **Temporary**– the change is expected to be in place for 0-5 years and can be reversed or no longer occurring beyond that timeframe.

Judging the Significance of Landscape Effects

GLVIA3 acknowledges that there are no hard and fast rules for making judgements as to whether an effect is significant but does suggest some approaches that could be adopted. For this chapter we have sequentially combined the identified effects that potentially change or influence each receptor to assess the overall significance.

Susceptibility to change and value are combined to ascertain the sensitivity of each receptor, and size/scale, geographical extent, duration and reversibility has been combined into an assessment of magnitude of change for each effect. The sensitivity and magnitude of change are combined to provide an overview of the distribution of judgements for each aspect to make an informed professional assessment of the overall level of the effect, drawing on guidance within GLVIA3. Therefore, a mechanistic matrix approach or a numerical scoring system will not be solely relied on for the assessment. In addition, professional judgement will be used in

reaching a conclusion on the overall level of the effect by considering the relative importance of each aspect.

Levels of effect are identified as **negligible**, **minor**, **moderate** or **major** or in some instances intermediate levels have been assigned such as **moderate-major**.

The resulting significance matrix is set out below in Table 5.1:

Table 5.1 Significance of Landscape Effects Matrix

Magnitude of Change (Nature of Effects)	Sensitivity (Nature of Receptor)		
	Low	Medium	High
Imperceptible	Negligible Effect	Negligible/Minor Effect	Minor Effect
Minor	Negligible/Minor Effect	Moderate/Minor Effect	Moderate Effect
Moderate	Minor/Moderate Effect	Moderate Effect	Moderate/Major Effect
Major	Moderate Effect	Moderate/Major Effect	Major Effect

Although an overall judgement has been made for the effect on a receptor the accompanying text has included commentary regarding the individual effects of the various components such as infrastructure, temporary and permanent structures and buildings and planting. These components or combination may be considered as having a beneficial or adverse effect; permanent or temporary; direct or indirect and this has been recorded where appropriate.

In terms of EIA Regulations significant landscape effects resulting from the Proposed Development are the effects which result in a 'moderate' or 'major' level of effect. It should be stressed that the effects that have been identified as significant could be beneficial or adverse. Effects that are deemed not to be significant i.e. those that are negligible, minor and moderate/minor are not ignored, and commentary is provided to explain the reasoning behind the judgement.

Furthermore, professional judgement has been used to determine whether the duration of the effects is either permanent or temporary and a conclusion is provided as to whether the direction of the effects is beneficial or adverse. The judgement of beneficial and adverse is

determined in relation to the degree to which the proposal fits with the landscape character and the contribution that the development makes to enhance the landscape, even if it is in contrast to the existing character.

This assessment will offer judgements to balance the overall conclusions by considering the adverse and beneficial effects that may arise from the works involved in the construction, operational and decommissioning stages of the solar farm. These may be provided in the design as mitigation measures to offset any potential adverse effects. This may be further qualified if any of the proposed elements can be viewed as being potentially beneficial through policy and design guidance provided by Hampshire County Council.

Significance Criteria for Visual Effects

To successfully assess the significance of visual effects requires the consideration of the nature of the visual receptors, also known as sensitivity, and the nature of the effect, also known as the magnitude of change.

The nature of the receptor should be assessed in terms of the value of the receptor and its susceptibility to the particular change of views and the visual amenity caused by the type of proposed development. The change, or nature of effect, is measured in terms of scale, size, geographical coverage, duration and reversibility.

The receptors are generally grouped into residential, recreational and transport receptors for the visual assessment and these categories are represented by several viewpoints and specific reference is made to these in the assessment. The visual receptors that have been assessed at the three stages (Construction, Operation and Decommission) are as follows:

- Residential Receptors:
- Recreational Receptors:
 - Public footpaths
 - National Cycle Routes
- Transport Receptors:
 - Roads and Lanes.

Nature of Visual Receptor (Sensitivity)

GVLA3 recommends that the visual receptors need to be assessed firstly in terms of their sensitivity, which is a combination of the value of the view and the susceptibility to change.

“The susceptibility of different visual receptors to changes in views and visual amenity is mainly a function of:

- The occupation or activity of people experiencing the view at particular locations; and
- The extent to which their attention or interest may therefore be focused on the views and the visual amenity they experience at particular locations.” (GVLA3 page 113 para 6.32)

The visual receptors most susceptible to change are generally likely to include, residents at home, people engaged in outdoor recreation including uses of public rights of way, visitors to heritage assets or other attractions, communities where views contribute to the landscape setting enjoyed by residents in the area.

Travellers on road, rail or other transport routes tend to fall into an intermediate category of moderate susceptibility to change but where travel involves recognised routes of high scenic quality then the awareness of views is likely to be high.

Visual receptors likely to be less sensitive to change include people engaged in outdoor sport or recreation that does not involve appreciation of views of the landscape, people at place of work and where the setting is not important to the quality of working life.” (GLVIA3 Page 113 paras 6.33-6.34)

The value attached to views is established through the baseline study based on review of: “Recognition of the value attached to particular views, for example in relation to heritage assets, or through other planning designations; Indicators of the value attached to views by visitors, for example through appearances in guidebooks or on tourist maps, provision of facilities for their enjoyment (such as parking places, sign boards and interpretive material) and references to them in literature or art (for example ‘Ruskins View’ over Lunedale, or the view from the Cob in Porthmadog over Traeth Mawr to Snowdonia which features in well-known Welsh paintings and the ‘Queens View’ in Scotland).” (GLVIA3 Page 114 paras 6.37)

For this assessment we have considered the value at regional and local level and judgements on the susceptibility of the receptor is recorded as High, Medium or Low.

Nature of Effect (Magnitude of Change)

Each effect on visual receptors needs to be assessed in terms of its size or scale; the geographical extent of the area influenced; and its duration and reversibility. In terms of size or scale, judgements are made to determine the extent of the changes in the view and visual amenity that is likely to be experienced by each effect.

For views within the landscape and areas, the scale or size depends on the degree to which the view is changed through the removal of the existing landscape components, or the addition of new components. For landscape features and elements, it depends on the extent of these that will be lost or changed, the proportion of the total extent that this represents and the contribution of that element to the visual character of the landscape.

Within this chapter the size/scale is described as Major, Moderate, Minor or Imperceptible. These are defined further below:

- **Major** – Large change in view, especially when the development is in close proximity in the main focus of views, or affecting a substantial part of the view, or providing contrast within the existing view;
- **Moderate** – Clearly perceptible change in view, where the development is relatively close but not necessarily in the main focus of the view, creating a distinct new element in the view;
- **Minor** – A small change in view, where the development is at a distance, mostly screened from view or where the scale of the landscape absorbs the development well;
- **Imperceptible** – A change in view that is barely noticeable or cannot be perceived.

The GLVIA3 (para 6.39) suggests that the geographical extent of a visual effect varies with different viewpoints and is likely to reflect:

- The angle of view in relation to the main activity of the receptor;
- The distance of the viewpoint from the Proposed Development;
- The extent of the area over which the changes would be visible.

Duration and reversibility of effects have also been measured as part of this assessment as the nature of the development is predominately temporary. The approach for the definition of temporal duration of effects is as follows:

- **A temporary effect:** An effect that will be experienced for 0-5 years;

- **A medium term effect:** An effect that will be experienced for 5-10 years;
- **A long term effect:** An effect that will be experienced for 10 years onwards; and
- **Permanent effect:** The change is expected to be permanent and there is no intention for it to be reversed.

The LVIA also tests the likely significance of effects for the construction, operational and decommissioning stages of the Proposed Development. The majority of the Proposed Development is operational for 40 years when consideration of decommission or renewal will take place.

The site construction process is temporary and therefore the main significance in landscape and visual terms will comprise of the following type of work for approximately 8 months:

- Mobilisation, site establishment and access routes
- Fencing work
- Solar array erection
- Cabling
- Inverter units and DNO termination cabinet
- Final commissioning;
- Traffic management on the local road network to facilitate safe operation of cars and trucks.

The operational phase is long term, lasting at least 25 years, but likely to be 40 years in this case. The main significance in landscape and visual terms during this time will comprise of the following:

- The use of solar panels to provide natural energy to the grid;
- Ongoing environmental monitoring and management; and
- Traffic management in the surrounding area for the safe management of maintenance vehicles.

The assessment is based on the indicative locations that are proposed within the land use areas identified in the New Buildings Farm PV General Layout (Appendix A in LVIA Figures).

The parameters include:

- Zones for solar panels arrays;
- Zones for specific ecological management; and
- Existing vegetation, structures and buildings.

The decommissioning stage will take place after the operational stage. It will occur in the reverse order to the installation and include the following that will relate to landscape and visual issues:

- Site clean-up;
- Removal of solar panels and other structures, sets and signage;
- Transport and removal of all rubbish;
- Any necessary ecological and agricultural reinstatement where required. This includes the removal of the scalplings for the construction of the roads, recovering with topsoils and then re-sowing with grass seed.

Judging the Significance of Visual Effects

As with the landscape effects we have sequentially combined the identified effects that potentially change or influence each receptor to assess the overall significance. Susceptibility to change and value are combined to ascertain the sensitivity of each visual receptor, and size/scale, geographical extent, duration, reversibility has been combined into an assessment of magnitude for each effect. The sensitivity and magnitude are combined to provide an overview of the distribution of judgements for each aspect to make an informed professional assessment of the overall level of the effect, drawing on guidance within GLVIA3. Therefore, a mechanistic matrix approach or a numerical scoring system was not solely relied on for the assessment. Instead, professional judgement was used in reaching a conclusion on the overall level of the effect by considering the relative importance of each aspect. Levels of effect are identified as negligible, minor, moderate or major or in some instances intermediate levels have been assigned such as moderate-major. Although an overall judgement has been made for the effect on a receptor, the accompanying text has included commentary regarding the individual effects of the various components such as infrastructure, buildings, green infrastructure and the overall visibility and quality of the view. In some instances, these components or combination may be considered as having a beneficial, neutral or adverse effect; permanent or temporary; direct or indirect and this has been recorded where appropriate.

Significant visual effects resulting from the Proposed Development are the effects which result in a 'moderate' or 'major' level of effect. It should be stressed that the effects that have been identified as significant could be beneficial or adverse. Effects that are deemed not to be significant i.e. those that are moderate/minor, negligible, and minor, are not ignored and commentary is provided to explain the reasoning the judgement.

Furthermore, professional judgment has been used to determine whether the duration of the effects is either permanent or temporary and a conclusion is provided as to whether the direction of the effects is beneficial or adverse.

The judgement of beneficial and adverse is determined in relation to the degree to which the proposal fits with the quality of the view or wider visual amenity and the contribution that the Proposed Development makes to enhance the visual quality of the landscape, even if it is in contrast to the existing character.

The assessment will offer judgements on whether the Proposed Development has adverse or beneficial effects and will balance the overall conclusion by considering the temporary introduction of appropriate building materials and green infrastructure as well as mitigation measures to offset any potential adverse effects.

The resulting significance matrix is set out below:

Table 5.2: Significance of Visual Effects Matrix

Magnitude of Change (Nature of Effects)	Sensitivity (Nature of Receptor)		
	Low	Medium	High
Imperceptible	Negligible Effect	Negligible/Minor Effect	Minor Effect
Minor	Negligible/Minor Effect	Moderate/Minor Effect	Moderate Effect
Moderate	Minor/Moderate Effect	Moderate Effect	Moderate/Major Effect
Major	Moderate Effect	Moderate/Major Effect	Major Effect

Legislative and Policy Framework

Legislation

The European Landscape Convention (ELC 2000) provides a foundation for closer co-operation on landscape issues across Europe and was ratified in the UK on the 21 November 2006 and became binding on 1 March 2007. The Convention identifies the need to recognise landscape in law, to develop and promote landscape policies dedicated to the protection, management and creation of landscapes, and to establish procedures for the participation of the general public and other stakeholders in the evolution and implementation of landscape policies. It also encourages the integration of landscape into all relevant areas of policy, including cultural, economic and social policies.