East Lothian Landscape Sensitivity Assessment

Renewable Energy Development

East Lothian Council

DRAFT – FOR PUBLIC CONSULTATION

Prepared by LUC

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Chapter 1
Introduction

Background to the study

1.1 In November 2025, LUC was commissioned by East Lothian Council to prepare a Landscape Sensitivity Assessment (LSA) for wind energy, solar photovoltaic (PV), battery energy storage systems (BESS) and certain other large-scale developments.

1.2 The method used is described in **Chapter 2** and results and guidance are presented in **Chapter 3**.

1.3 The assessment is based on the description and classification of the landscape presented in the East Lothian Local Development Plan: Special Landscape Areas Supplementary Planning Guidance (2018) **[See reference 1]**. This provides a characterisation of the East Lothian Council area into Landscape Character Types (LCTs) and Landscape Character Areas (LCAs). This report assesses the relative sensitivity of each of the 19 LCAs within East Lothian, as shown on **Figure B.1**.

1.4 Landscape character does not change at administrative boundaries, or at fixed lines on the ground. In practice, changes in landscape character are transitional. Visibility of neighbouring landscapes from within East Lothian contributes to the local landscape character and sensitivity, particularly when considering elements such as skylines. The assessment therefore considers the contribution of adjoining landscape within Midlothian, Scottish Borders and the City of Edinburgh, in so far as it is appropriate to do so.

Purpose of the study

1.5 The purpose of this LSA is to evaluate how sensitive different LCAs are to different types and scales of development. The types of development considered in this LSA include wind turbines, solar PV and BESS, and other large-scale developments such as substations and datacentres.

1.6 This LSA provides judgements on the sensitivity of the landscape within the East Lothian Council area to these types of development. It considers different scales of each type of development, with the exception of other large-scale development. For example, for wind energy developments, it considers turbines with different tip heights, and the number of turbines (e.g. single turbines, small groups of turbines,

and large groups of turbines). Likewise, different spatial scales are assessed for solar PV and BESS developments.

1.7 The findings of this assessment will help the Council and developers guide renewable energy developments to less sensitive parts of the landscape and achieve better design outcomes through well-considered siting and appropriate mitigation.

User guide

1.8 Users of this document are encouraged to review the LCA assessments (in **Appendix A**) for the area within which a proposed development or site is located.

1.9 Each development type (wind energy, solar PV/BESS, other large-scale development) is assessed against a range of criteria, with an overall judgement on sensitivity provided for each criterion for each type of development. The sensitivity judgement is accompanied by supporting text which draws out reasoning explaining why a certain type of development has received its corresponding sensitivity score. This justification text for each criterion expands on how sensitivity may vary depending on the scale of development. This information should be used to inform the siting of development.

1.10 At the end of the assessment, a summary of sensitivity is provided for each type of development. This identifies how sensitivity varies for different scales of development. Users should refer to this to guide decisions on the appropriate scale for development within the LCA. The summary identifies any localised variations in sensitivity within the LCA, which can be helpful in guiding development to the least sensitive locations and avoiding areas where impacts would be greater.

1.11 Developers are encouraged to use this document to help identify locations which may be less sensitive to a given type of development, when considering the range of factors set out in the criteria. Likewise, decision makers should refer to this document to help understand where development is likely to have greater or lesser impact on the landscape. This understanding will help steer proposed development away from the areas of highest sensitivity.

1.12 Siting and design guidance is provided at the LCT level in **Chapter 4** of this document, covering groups of LCAs with broadly similar character. More specific guidance is also provided for each LCA within the specific LCA assessments within **Appendix A**. Both developers and decision makers should refer to this guidance during the early stages of planning, to ensure potential landscape and visual impacts are considered from the outset, and addressed appropriately through design.

Policy context

European Landscape Convention

1.13 The European Landscape Convention (ELC) came into force in the UK in March 2007. It established the need to recognise landscape in law; develop landscape policies dedicated to the protection, management, and planning of landscape; and to establish procedures for the participation of the general public and other stakeholders in the creation and implementation of landscape policies. The ELC remains relevant despite the UK's departure from the EU.

1.14 The ELC definition of 'landscape' recognises that all landscape matters, be it ordinary, degraded, or outstanding:

> *"Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors."*

1.15 Signing up to the ELC means that the UK is committed to protect, manage, and plan our landscape for the future. The Convention also advocates work to raise landscape awareness, involvement and enjoyment amongst local and visiting communities. Landscape character is defined by the ELC as *"a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse".* Again, this reinforces the underlying message that all landscape matters.

1.16 The Landscape Institute's Technical Guidance Note 02/21 **[See reference 2]** provides guidance on how to make judgements on the value of a landscape when it lies outside of national landscape designations.

National Planning Framework 4 (NPF4)

1.17 The Scottish Government's National Planning Framework 4 (NPF4) **[See reference 3]** strongly supports the principle of renewable energy, with the policy intent of Policy 11 *"to encourage, promote and facilitate all forms of renewable energy development onshore and offshore"*, with the exception of *"wind farms in National Parks and National Scenic Areas"* (NPF4, Policy 11, Page 53). Policy 11(e)i and ii require developments to demonstrate how the following are addressed:

- *"impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;*

- *significant landscape and visual impacts…"*

1.18 NPF4 Policy 4 concerns natural places. It includes the following sections relevant to this assessment:

- NPF4 Policy 4(a) states that: *"Development proposals which by virtue of type, location or scale will have an unacceptable impact on the natural environment, will not be supported".*
- NPF4 Policy 4(c) states that: *"Development proposals that will affect a National Park, National Scenic Area, Site of Special Scientific Interest or a National Nature Reserve will only be supported where:*
  - *The objectives of designation and the overall integrity of the areas will not be compromised; or*
  - *Any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by social, environmental or economic benefits of national importance."*
- NPF4 Policy 4(d) states that: *"Development proposals that affect a site designated as a local nature conservation site or landscape area in the LDP will only be supported where:*
  - *Development will not have significant adverse effects on the integrity of the area or the qualities for which it has been identified; or*
  - *Any significant adverse effects on the integrity of the area are clearly outweighed by social, environmental or economic benefits of at least local importance."*

1.19 This assessment will take into account the likely landscape impacts of siting development within each LCA and will consider how development may impact the special qualities of designated landscapes such as Special Landscape Areas.

Local Plan Policy

1.20 This assessment will provide evidence to inform the review of the East Local Development Plan (LDP) 2018 **[See reference 4]** policies and content of supplementary planning documents. The following policies of the East Lothian LDP 2018 are of relevance to the development of renewable energy:

- WD1: Wind Farms;
- WD2: Smaller Scale Wind Turbine Development;
- WD3: All Wind Turbines;

- WD5: Re-powering;
- SEH1: Sustainable Energy and Heat;
- SEH2: Low and Zero Carbon Generating Technologies;
- DC1: Rural Diversification;
- DC7: Development in Edinburgh Green Belt;
- DC9: Special Landscape Areas;
- DC10: The Green Network;
- DP1: Landscape Character;
- CH2: Conservation Areas;
- CH4: Scheduled Monuments and Archaeological Sites;
- CH5: Battlefields; and
- CH6: Gardens and Designed Landscapes.

Other relevant studies

Special Landscape Areas – Supplementary Planning Guidance

1.21 East Lothian Council has defined 19 Landscape Character Areas (LCAs) across six Landscape Character Types (LCTs), as shown on **Figure B.1**. The landscape character statements for each of these LCAs are described in Supplementary Planning Guidance (SPG) **[See reference 1]**. These statements provide a detailed description of landscape character and identify specific management guidelines relevant to each LCA.

1.22 The LCTs identified in the East Lothian SPG broadly align with the LCTs identified in NatureScot's National Landscape Character Assessment (2019) **[See reference 5]**, as shown on **Figure B.2**. The NatureScot assessment only defines LCTs, while the East Lothian SPG introduces LCAs, which are geographically discrete areas of each LCT.

1.23 There are some very slight variations in boundaries between the two studies. There is only one notable difference, which is in the boundaries for the Innerwick Coast LCA, which broadly corresponds with NatureScot's Coastal Margins – Lothians LCT 277. The main difference here is the East Lothian LCA boundary extends further

inland by approximately 1-1.5km, compared to NatureScot's LCT boundary, incorporating more of the eastern fringes of the Lammermuir Hills.

1.24 Special Landscape Areas (SLAs) are recognised in policy within the LDP **[See reference 4]** and described in SPG **[See reference 1]**. SLAs are of relevance to this study as they indicate valued landscape qualities. The SLA Statements of Importance also describe management and development considerations. There are 32 SLAs within East Lothian, as shown on **Figure B.3**.

Chapter 2
Methodology

2.1 The study was undertaken in accordance with NatureScot's Landscape Sensitivity Assessment Guidance (2022) **[See reference 6]**. It also draws on other relevant guidance for determining landscape value and sensitivity, including the Guidelines for Landscape and Visual Impact Assessment Third Edition (GLVIA3) **[See reference 7]** and the Landscape Institute's Technical Guidance Note 02/21 **[See reference 2]**.

2.2 This methodology sets out the specific landscape and visual characteristics that are most likely to be affected by renewable energy development (wind turbines, solar PV and BESS) and other large-scale development. In line with the NatureScot Landscape Sensitivity Assessment Guidance, the study has adopted a series of criteria that consider both landscape susceptibility and landscape value.

2.3 For each LCA, the landscape sensitivity assessment presents an overall judgement on landscape sensitivity to each development type. The judgement is on a five-point scale from 'high' to 'low'.

Scope of the assessment

2.4 The LSA focuses on the landscape considerations associated with wind energy, solar PV, BESS and other large-scale development at a strategic level.

2.5 For the purposes of this study, 'other large-scale development' includes developments such as datacentres, converter stations, hydrogen production facilities and enclosed substations. These developments are typically larger in scale (often 20-30m in height) than commercial and retail developments which generally comprise two to three storeys (e.g. between 12-16.5m). Agricultural buildings are excluded from this category of development.

2.6 The LSA provides an indication of landscape sensitivity across the East Lothian Council area. It should be noted that this study assesses only the sensitivity of landscape character to the identified development types. The feasibility of development within any of the LCAs, based on the landscape sensitivities identified in this report, is likely to also depend on other environmental sensitivities and/or technical constraints that fall outside the scope of this assessment.

2.7 Appropriate consideration was given to wind, solar PV, BESS and other large-scale development in neighbouring local authorities, when considering patterns of

renewable energy development and potential for cumulative impact. Further information on consideration of cumulative effects is set out in paragraph 2.18.

Spatial framework for the assessment

2.8 The assessment uses the spatial framework of Landscape Character Types (LCTs) and Landscape Character Areas (LCAs) identified in East Lothian Council Special Landscape Areas SPG **[See reference 1]**, as shown on **Figure B.1**. This builds on the National Landscape Character Assessment produced by NatureScot **[See reference 5]** The assessment also makes references to the SLA descriptions provided within the Special Landscape Areas SPG.

Table 2.1: East Lothian Landscape Character Types and Areas

Landscape Character Type	Landscape Character Area
Uplands	Lammermuir Plateau
Uplands	Lammermuir Plateau with Wind Farm
Uplands	Whiteadder Upland Valley with Farmland
Uplands	Plateau Grassland
Upland Fringes	Western Lammermuir Fringe
Upland Fringes	Eastern Lammermuir Fringe
Lowland River Valleys	Whittingehame Water
Lowland River Valleys	Gifford Water
Lowland River Valleys	Humbie Water
Lowland River Valleys	River Esk
Lowland Hills and Ridges	Tranent Ridge
Lowland Hills and Ridges	Garleton Hills
Lowland Plains	Lower Tyne Valley Plain
Lowland Plains	Mid Tyne Valley Plain
Lowland Plains	Coastal Plain
Lowland Plains	Settled Farmland
Coastal Margins	Innerwick Coastal Margin
Coastal Margins	Northern Coastal Margin
Coastal Margins	Musselburgh/Prestonpans Fringe

Characteristics of wind energy, solar PV, BESS and other large-scale development types and their potential landscape impacts

Wind energy developments

2.9 All turbines considered in this study are tall vertical structures that may be highly visible within the landscape. Wind energy developments may affect the landscape in the following ways:

- Construction of turbines and related infrastructure (e.g. access tracks, hardstanding, borrow pits, substation buildings etc.) may result in changes to natural topography and the direct loss of landscape features e.g. trees, hedgerows, moorland or arable fields;
- The presence of turbines (and turbine lighting, where required) may increase the perceived human influence on the landscape, and this can particularly affect landscapes with a strong sense of naturalness or tranquillity (e.g. landscapes which lack overt influence from built development, or human activities), or which form the contemporary landscape setting to heritage assets, or which exhibit a strong sense of time depth (e.g. through a large concentration of heritage features which contribute to the historic character of the area);
- The movement of the turbine blades is a unique feature of wind energy development, setting them apart from other stationary tall structures in the landscape, and may affect characteristics of stillness, remoteness and tranquillity;
- Turbines may be perceived as out of scale in relation to human scale features in the landscape e.g. farmsteads, residential dwellings, villages, quiet roads, walls, hedgerows and trees;
- The tall vertical scale of turbines may alter the apparent scale of landforms;
- Turbines on skylines may compete with existing skyline features (e.g. distinctive cairns), or where undeveloped skylines or landmark features are characteristic of the landscape; and
- Access tracks or upgrades on access routes may require alterations to topography, composition of rural roads (e.g. widening or straightening) and removal of roadside vegetation. Access tracks can be highly visible, particularly in an open or undeveloped landscape.

2.10 The LSA considers the sensitivity of the landscape to different scales of wind turbines, using bands reflecting the typical scale of development that is most likely to be put forward by developers. In addition to turbine tip height, the 'size' of a wind energy development can be defined by the number of turbines. In terms of turbine numbers, the study considers a range of development scales, though this is dealt with in a less formal way than for turbine height, since height is the key factor in determining the compatibility of a proposal with its landscape. Single turbines, smaller groups of turbines (approximately two to three turbines) and medium or larger groups (four or more turbines) are mentioned in the assessment where it is judged that the sensitivity of the landscape would differ between these sizes of development. **Table 2.2** sets out the indicative wind energy development scenarios considered in the sensitivity assessment, based on the turbine tip height.

2.11 The study also requires consideration of extensions to and repowering of existing schemes. These are addressed more generally by reference to compatibility with existing developments, particularly in terms of turbine scale, rather than through the definition of additional development types. The appropriateness of a repowering proposal will depend primarily on the height and number of turbines proposed, albeit that the prior existence of a wind farm is a material consideration, and as such these schemes can be considered in landscape sensitivity terms as though they are 'new' developments.

Table 2.2: Wind energy development sizes/scales

Wind Turbine Size
Up to 49.9m tip height
50m to 99.9m tip height
100m to 149.9m tip height
150m to 199.9m tip height
Over 200m tip height

Solar PV developments

2.12 Solar PV developments consist of racks of panels and associated structures such as inverters or transformer substations, fencing, and screening planting. These developments can occupy substantial areas of ground which may be widely visible. Landscape effects may include the following:

- Solar PV developments may be more visible in an open landscape, on upper slopes of hillsides or where overlooked;

- The reflective nature and materiality of PV panels may contrast with the colour and texture of the surrounding natural landscape;
- The presence of solar PV panels and associated infrastructure may increase the perceived human influence on the landscape and erode the character of more natural or tranquil landscapes which currently lack overt influence from built development and/or incongruous or inharmonious human activity;
- Solar PV development will change the land use and appearance of a field or fields, affecting land cover patterns;
- The regular edges and linear arrangement of solar PV developments may be conspicuous in more irregular landscape (particularly where field boundaries are irregular);
- The height of racks (up to 4 metres) and associated fencing is likely to exceed the scale of typical hedgerow field boundaries;
- Screen planting (often in the form of tall hedgerows) and changes to landscape management (e.g. letting existing hedgerows grow taller, or managing vegetation to avoid shading) around solar PV developments may change the sense of enclosure of a landscape and restrict or alter important views; and
- Construction of solar PV development may result in damage to landscape features such as hedgerows or traditional stone field boundaries or alteration of the underlying field pattern or scale.

2.13 The LSA considers the sensitivity of the landscape to different scales of solar PV development, using bandings reflecting those that are most likely to be put forward by developers in East Lothian. These are set out in **Table 2.3** below.

Table 2.3: Solar development sizes/scales

Solar PV Size	Solar PV Scale Bandings
Up to 4.9 hectares (ha)	Small
5ha to 15ha	Medium
15ha to 50ha	Large
More than 50ha	Very Large

Battery energy storage systems

2.14 This study also considers the potential for BESS installations. BESS generally comprise battery storage containers (number depending on the capacity of the installation, typically 3m high) and may also include associated substations. Landscape effects would be similar to effects relating to solar PV developments, as set out in paragraph 2.12, although BESS development is often of a smaller spatial scale than solar PV.

2.15 The LSA considers the sensitivity of the landscape to different scales of BESS development, using bandings reflecting those that are most likely to be put forward by developers. These are set out in **Table 2.4** below.

Table 2.4: BESS development sizes/scales

BESS Size/Scale	BESS Scale Bandings
Up to 4.9 hectares (ha)	Small
5ha to 9.9ha	Medium
10ha to 15ha	Large
More than 15ha	Very Large

Large-scale development

2.16 The study considers the potential for other large-scale developments linked to energy generation. This includes development such as datacentres, converter stations, large hydrogen production facilities, and large enclosed substations. While varying in purpose, these developments generally share the characteristics of very large, bulky buildings which are often up to 20-30 metres in height and cover a large footprint. Landscape effects may include the following:

- Large-scale developments may be particularly visible in open and flat landscapes, due to their height, footprint and bulky massing;
- They may appear much larger in height and area than typical landscape features (e.g. hedgerows and woodland) and other buildings (e.g. residential properties, commercial and agricultural buildings);
- The height of development (often up to around 30m high) makes it difficult for development to be completely screened by landscape features. For example, the upper extents of such developments may be seen above treelines. Substantial screen planting to mitigate views (e.g. woodland planting) may

change the sense of enclosure of a landscape and its landcover pattern. Extensive mitigation planting may also restrict or alter important views;

- The colour of large-scale developments may contrast with the colour and texture of the surrounding landscape;
- The presence of large bulky buildings may increase the perceived human influence on the landscape and may appear incongruous in rural and more natural areas with a lack of overt influence from built development and/or incongruous or inharmonious human activity; and
- Large buildings may appear out of place in areas of landscape which are valued for their qualities of remoteness and tranquillity.

2.17 Given that most large-scale development of this type is generally of a similar scale, different development size/scale scenarios are not considered in the LSA.

Consideration of cumulative effects

2.18 As larger numbers of renewable energy developments are built, it is increasingly necessary to consider their cumulative effects. The cumulative effects of multiple schemes are a significant issue for planning authorities.

2.19 Cumulative effects consider the total combined or incremental impact of multiple developments over a period of time. The most significant cumulative effects are those that result in changes in the character of a landscape to such an extent as to transform it into a different landscape type. It should be recognised that if numerous developments are built, then at some point another development could tip the balance through its additional effects. This 'tipping point' is difficult to judge in practice. In the past, this has been described as the 'capacity' of the landscape, although more recent guidance on landscape sensitivity assessment avoids use of this term. Ultimately, it is for the decision maker to consider how much change to an area is acceptable, when balanced against the identified level of need for the development.

2.20 Key cumulative considerations include:

- How different developments relate to each other and the underlying landscape;
- Similarities or differences in design rationale, such as turbine scale and spacing, or relationship of solar arrays to field patterns;

- Their frequency as one moves through the landscape, or the sequential visual effects resulting from multiple developments;
- How landscape mitigation associated with multiple developments influences the landscape pattern or character of views;
- How different developments relate to the composition of key views e.g. consideration of impacts on developed versus undeveloped parts of the view; and
- Their visual separation, or the potential for combined or successive visual effects in key views.

2.21 The LSA does not include assessment of the potential cumulative impacts of specific multiple developments, as different combinations of development are not known at this stage. Specific cumulative effects are most appropriately considered at the individual site level, including through the process of cumulative Landscape and Visual Impact Assessment (LVIA).

2.22 However, the LSA does consider the influence of the baseline of operational wind and solar developments within the landscape, emerging patterns of consented and proposed developments, and how the key sensitivities of the landscape may be influenced by multiple developments.

Evaluating landscape sensitivity

2.23 The landscape sensitivity assessment is informed by NatureScot's Landscape Sensitivity Assessment Guidance (2022) **[See reference** 6**]**.

2.24 The study defines landscape sensitivity as follows:

> *"Landscape sensitivity is a measure of the ability of a landscape to accommodate change arising from specified development types or land management. It combines judgements of the susceptibility of the landscape to change and the values attached to the landscape."* **[See reference** 6**]**

Assessment criteria

2.25 Landscape sensitivity assessment requires consideration of both landscape susceptibility (how vulnerable the landscape is to change from the type of development being assessed) and landscape value (the relative value attached to

different landscape types by society). In this study, susceptibility and value are not considered separately, but both are addressed through the criteria that have been developed.

2.26 The selection of landscape sensitivity indicators ('criteria') for this study is informed by the attributes of the landscape that could be affected by wind, solar PV, BESS and other large-scale development. These consider the 'landscape', 'visual' and 'perceptual' aspects of sensitivity. Their selection is also based on current best practice as well as experience gained by LUC in undertaking similar studies elsewhere in the UK, including in Midlothian and the City of Edinburgh.

2.27 The following six criteria headings are used for this study:

- Landform and scale;
- Landcover (including field and settlement patterns);
- Historic landscape character;
- Visual receptors;
- Visual amenity (including skylines and intervisibility); and
- Perceptual and scenic qualities.

2.28 Each criterion evaluates elements of both susceptibility and value. Some criteria are more closely linked with value, such as 'perceptual and scenic qualities', which incorporates consideration of scenic value as represented by SLA designation. However, other aspects of value are covered elsewhere. For example, recreational value is considered in relation to 'visual receptors'. All the criteria give some consideration to how valued the relevant characteristics of landscape are in reaching a judgement.

2.29 The following text provides guidance and examples of higher and lower sensitivity features/attributes for applying the criteria in East Lothian. The guidance differs for each development type based on their characteristics as discussed in the preceding section. In some cases, the nature of potential effects is considered similar enough that development types can be considered together. In the sections below, solar PV and BESS development types are considered together for all criteria, as these have similar characteristics as noted in paragraph 2.14. For Historic Landscape Character and Visual Receptors, all development types are considered together as they would all have similar types of effects on these aspects of landscape.

2.30 The assessments present a commentary against each criterion to inform the judgements on levels of sensitivity. It is important to note that the relative importance

of each criterion varies between landscape types (due to differences in landscape character). The initial stage of the assessment involved a thorough desk-based study drawing on sources of spatial and descriptive information regarding the landscape. This was supplemented by field survey work undertaken by a team of landscape professionals to verify the findings.

Landform and scale assessment criteria and guidance

Wind energy development

2.31 A flat or gently sloping landform is likely to be less sensitive to wind energy development than a landscape with a dramatic or rugged landform, distinct landform features (including prominent hills and valleys or glens) or pronounced undulations. Larger scale landforms are likely to be less sensitive than smaller scale landforms. This is because turbines may appear out of scale, detract from visually important landforms or appear visually confusion when they sit at varying heights in smaller-scale or more complex landscapes.

Solar PV/BESS development

2.32 A flat or gently undulating lowland landscape or extensive plateau is likely to be less sensitive to solar/BESS development than a landscape with prominent landforms, including hills and rugged outcrops. This is because arrays of solar panels/BESS units will be less easily perceived from within a flat landscape where vegetation (e.g. hedges and trees) may provide additional screening, compared to if it was on an elevated slope (including hills and rugged outcrops) which are more widely visible. Furthermore, the angular and engineered form of solar PV/BESS would contrast with the underlying landform, such as smooth hills and undulating fields.

Other large-scale development

2.33 A flat or gently undulating lowland landscape or extensive plateau is likely to be less sensitive to large-scale bulky development than a landscape with prominent landform. Large-scale development will be less prominent within a flatter landscape than if it was in an elevated location. Landform features such as hills or valleys often help provide scale comparison, making it easier to perceive the scale of the development compared to its surroundings. However, if there is a lack of distinctive features in the landscape, it makes it harder to appreciate the scale of development.

2.34 The sensitivity criteria for each development type are set out in **Table 2.5**.

Land cover pattern (including field and settlement pattern)

Wind energy development

2.35 A simple, regular landscape with extensive areas of consistent land cover is likely to be less sensitive to wind energy development than a landscape with more complex or irregular land cover patterns, smaller and/or irregular field sizes.

2.36 Landscape with frequent human scale features, such as settlements, farmsteads, small farm woodlands, trees and hedges may be particularly sensitive to larger turbines. This is because large features such as wind turbines may dominate smaller scale features within the landscape.

2.37 Figure B.4 illustrates ecological designations found within East Lothian. These are areas protected for their biodiversity and habitats, providing an indication of the variety of landcover within the area.

Solar PV/BESS development

2.38 Since solar PV panels/BESS developments introduce a new land cover (of built structures), landscapes containing existing hard surfacing or built elements (e.g. urban areas or brownfield sites) are likely to be less sensitive to solar PV development than more undeveloped or naturalistic landscapes.

2.39 Landscape with small-scale, more irregular field patterns is likely to be more sensitive to the introduction of solar PV development than landscape with large, regular scale field patterns because of the risk of diluting or masking the characteristic landscape patterns. This would be particularly apparent if development takes place across a number of adjacent fields, or where the field pattern is small and intricate (bearing in mind that the height of panels or BESS units could exceed that of a typical hedge or stone wall). Landscape with frequent human scale features, such as settlements, farmsteads, small farm woodlands, trees and hedges may be particularly sensitive to BESS development which may dominate smaller scale features within the landscape.

2.40 Landscape with a distinctive or historic settlement pattern would be particularly sensitive to the introduction of solar PV/BESS.

Other large-scale development

2.41 The development of large bulky buildings would change the land cover of an area to that of a developed and built-up nature. Landscapes containing existing larger built elements or extensive hard surfacing (e.g. urban areas, industrial estates or brownfield sites) are likely to be less sensitive to other large-scale development linked to energy generation than more undeveloped or naturalistic landscapes.

2.42 Landscape with small-scale, more irregular field patterns is likely to be more sensitive to the introduction of large-scale bulky development than landscape with large, regular scale field patterns because of the risk of overriding the characteristic landscape patterns by introducing development with a large footprint and massing.

2.43 Landscapes with features such as woodland are likely to be less sensitive to large-scale development than an open and unenclosed landscape, as existing woodland features would help to provide screening of the development, and may form the basis for further mitigation planting. Lower landscape elements such as hedgerows are unlikely to provide much screening given the likely scale of this type of development (often up to 20-30m in height).

2.44 The sensitivity criteria for each development type are set out in **Table 2.6**.

Historic landscape character

Wind energy, solar PV/BESS and other large-scale development

2.45 A landscape which contains important archaeological or historic features or historic associations is likely to have a higher level of sensitivity to wind energy, solar PV/BESS and other large-scale development. Historical features may be in the form of historic land cover types and field systems, historic designed landscapes (including those listed on the Inventory of Gardens and Designed Landscapes (GDL)), and designated and non-designated buildings/structures noted for their historical significance. Historic assets and designations within East Lothian are illustrated on **Figure B.5**.

2.46 Areas which provides the contemporary landscape setting of a historical feature or designed landscape may also have higher sensitivity to wind energy, solar PV/BESS and other large-scale development. A landscape that is primarily of modern influence and origin (e.g. a landscape with extensive new-build developments, large intensive arable fields, and/or industrial or commercial

developments) will have a lower sensitivity to wind energy, solar PV/BESS and other large-scale development.

2.47 The extent of time depth experienced within a landscape may also influence its sensitivity to different types of development. Time depth considers the 'historical dimension' of landscape, and how the landscape today is shaped by evidence of past human activity which can be seen to varying degrees. A landscape with a stronger sense of time depth may have a higher sensitivity to wind energy, solar PV/BESS and other large-scale development.

2.48 The sensitivity criteria for each development type are set out in **Table 2.7**.

Visual receptors

Wind energy, solar PV/BESS and other large-scale development

2.49 This criterion considers the density of sensitive visual receptors, such as residents at home and in their communities, and people accessing the landscape for recreational purposes. This may be indicated by the presence of features and facilities which enable enjoyment of the landscape, and the importance of these. This is indicated by the presence of long-distance walking or cycle routes, Core Paths or Other Paths (identified by East Lothian Council in the Core Paths Plan), Country Parks, and/or outdoor tourist/visitor attractions with facilities where enjoyment of the landscape is important to the experience.

2.50 Key visual receptors within East Lothian are illustrated on **Figure B.6**.

Visual amenity (including skylines and intervisibility)

2.51 The relative visibility of a landscape may influence its sensitivity to wind, solar PV/BESS and other large-scale development. An elevated landscape such as a hill range or plateau, which is viewed from another landscape, may be more sensitive than a landscape with limited visibility. This criterion considers the influence of both landform and land cover on the openness or enclosure of views and also builds on the consideration of density of visual receptors covered in the criteria above.

2.52 Landscape which has an important visual relationship with other areas, for example where one area provides a backdrop to a neighbouring area, are considered more sensitive than those with few visual relationships. The extent of inter-visibility may be modified by the importance of these views to appreciation of the landscape, and whether adjacent areas of landscape provide a setting for one another.

2.53 This criterion also considers the role of the landscape, for example in forming the setting of a settlement, reinforcing settlement identity, or providing a gateway function, as perceived by residents at home and in their communities who are considered sensitive to changes in the view resulting from renewable energy development.

Wind energy development

2.54 Prominent and distinctive and/or undeveloped skylines, or skylines with important landmark features, are likely to be more sensitive to wind energy development because turbines may detract from these skylines as features in the landscape, or draw attention away from existing landform or landmark features on skylines. Such skylines are of particular importance in East Lothian, with the Lammermuir Hills forming a distinctive elevated skyline in views throughout the area. Important landmark features on the skyline might include historic features or monuments as well as landforms. Where skylines are affected by development, e.g. through the presence of electricity pylons or existing turbines, the addition of turbines of a different scale may lead to visual confusion. Therefore, the presence of existing development does not always mean a lower sensitivity to new development.

Solar PV/BESS development

2.55 Prominent and distinctive and/or undeveloped skylines are likely to be more sensitive to solar PV/BESS development because solar panels or BESS units may detract from these skylines as features in the landscape. Therefore, already developed skylines may be less sensitive to solar PV/BESS development. However, solar PV/BESS development along developed skylines (e.g. featuring electricity pylons) may lead to visual confusion due to differences in scale and might not necessarily indicate lower sensitivity. Areas offering views across the landscape may be more sensitive to solar PV/BESS development which have a large spatial extending across several fields (depending on size), due to the potential for these types of development to occupy a wide horizontal field of view.

Other large-scale development

2.56 Prominent and distinctive and/or undeveloped skylines, or skylines with important landmark features, are likely to be more sensitive to large-scale development because the built form may detract from skylines as features in the landscape or draw attention away from existing landform or landmark features on skylines if not sited appropriately. Important landmark features on the skyline might

include historic features or monuments as well as landform. Where skylines are affected by development, e.g. through the presence of electricity pylons or wind farms, other large-scale energy development may lead to visual confusion due to differences in scale and massing. Therefore, developed skylines might not necessarily indicate lower sensitivity.

2.57 The sensitivity criteria for each development type are set out in **Table 2.9**.

Perceptual and scenic qualities

2.58 Landscape that is relatively remote or tranquil tends to be more sensitive to wind, solar PV/BESS and other large-scale development, since these developments may be perceived as intrusive. Landscape which is relatively undeveloped and has a perceived sense of naturalness or traditional rural feel (e.g. an agricultural landscape with a scattering of farmsteads), and a general lack of human activity and disturbance, will therefore be more sensitive. Qualities such as tranquillity can be found even in settled areas, where the influence of overtly modern development is reduced. These types of development will generally be less intrusive in landscape which is strongly influenced by modern development, including settlement, industrial and commercial development and infrastructure, and brownfield sites.

2.59 Landscape that has a high scenic quality will be more sensitive. Scenic qualities can include contrasts and combinations of landform and landcover. Scenic qualities are recorded in the Statement of Importance for Special Landscape Areas **[See reference 1]** and noted from fieldwork. These scenic qualities contribute towards the understanding and judgements on landscape value.

Wind energy development

2.60 Landscape that is relatively remote or tranquil (and with dark skies) tends to be more sensitive to wind energy, since turbines may be perceived as intrusive. Remoteness and tranquillity during hours of darkness may be reduced on large turbines (over 150m to tip) due to the requirement for aviation lighting.

2.61 Landscape that has a high scenic quality will be more sensitive to wind energy development. Scenic qualities can include contrasts and combinations of landform and landcover, which are found throughout the varied landscapes within East Lothian.

Solar PV/BESS development

2.62 Solar PV/BESS development will generally be less intrusive in a landscape which is strongly influenced by modern development, including settlement, industrial and commercial development and infrastructure, and brownfield sites. Solar PV/BESS development will be less intrusive in landscape which is well screened by landform and/or vegetation.

Other large-scale development

2.63 The presence of large-scale energy development will generally be less intrusive in a landscape which is strongly influenced by modern development, including settlement, industrial and commercial development and infrastructure.

2.64 The sensitivity criteria for each development type are set out in **Table 2.10**.

Assessment criteria tables

Landform and scale

Table 2.5: Landform and scale

Development Type	Low	Low-Medium	Medium	Medium-High	High
Wind	An extensive lowland flat landscape or plateau; often a larger scale landform.	A simple gently rolling landscape; likely to be a medium-large scale landform.	An undulating landscape, perhaps also incised by valleys or glens; likely to be a medium scale landform.	A landscape with distinct landform features, and/or irregular in topographic appearance (which may be large in scale), or a smaller scale landform.	A landscape with a rugged landform or dramatic landform features (which may be large in scale), or a small scale or intimate landform.
Solar PV/BESS	As for wind.	As for wind.	As for wind.	As for wind.	As for wind.
Large-scale development	As for wind.	As for wind.	As for wind.	As for wind.	As for wind.

Land cover pattern (including field and settlement pattern)

Table 2.6: Land cover pattern (including field and settlement pattern)

Development Type	Low	Low-Medium	Medium	Medium-High	High
Wind	An open, continuous and unenclosed landscape with uniform land cover, or an urban or 'brownfield' landscape. Few/no human-scale features outside of urban areas.	A landscape of large open fields of modern enclosure, with little variety in land cover such as hedgerows, woodlands etc. Occasional human-scale features such as trees and domestic buildings.	A landscape with medium sized fields (or a mix of modern and traditional field patterns) and some variations in land cover. A semi-developed landscape, which comprises a mix of natural and semi-natural land and areas of human influence (e.g. urban development, brownfield sites etc.).	A landscape with irregular or small-scale fields and a variety in land cover. An undeveloped landscape, perhaps with some areas of semi-natural land cover. A landscape that is lightly settled and/or retains a historic settlement pattern, with frequent human scale features.	A landscape dominated by traditional field patterns and/or semi-natural land cover. The field pattern may be characterised by smaller-scale, traditional fields which are long-established, often small and irregular in size and comprise conventional boundary treatment such as stone walls and hedgerows. An undeveloped landscape with a sparse settlement pattern and/or has retained a strong historic settlement pattern. A landscape with a dense distribution of human-scale features, such as woodland.
Solar PV/BESS	A landscape with large-scale, regular fields of mainly modern	A landscape which is mainly defined by large, modern fields	A landscape with a mixture of large-scale, amalgamated fields	A landscape with irregular or small-scale field patterns, with a	A landscape dominated by small-scale, traditional field

Development Type	Low	Low-Medium	Medium	Medium-High	High
	origin. An urban or 'brownfield' landscape. Few/no human-scale features.	or those sub-divided for non-traditional uses. An area of some urban or brownfield influences. A landscape containing human-scale features such as trees and domestic buildings.	with modern boundary treatment (e.g. fencing) and some smaller, more traditional enclosure. An undeveloped landscape, perhaps with some brownfield sites or urban influences.	few isolated areas of modern enclosure. An undeveloped landscape with some areas of semi-natural land cover. An undeveloped landscape that is lightly settled and/or retains a historic settlement pattern, with frequent human scale features.	patterns and/or by semi-natural land cover. An undeveloped landscape with a sparse settlement pattern and/or has retained a strong historic settlement pattern. A landscape with a dense distribution of human-scale features, such as woodland.
Large-scale development	As for solar PV/BESS. Larger field patterns are more accommodating of this type of development. A lack of human-scale features makes it harder to perceive the apparent scale of this type of development which is larger both in height and massing.	As for solar PV/BESS. Larger field patterns are more accommodating of this type of development. Limited human-scale features to provide comparison helps reduce the apparent scale of this type of development.	As for solar PV/BESS. Larger scale fields with modern boundary treatment may be more accommodating than smaller field.	As for solar PV/BESS, but the larger scale (both height and massing) of this type of development may be incongruous with smaller-scale field patterns and frequent human scale features (e.g. residential buildings, trees and woodland).	As for solar PV/BESS, but the larger scale (both height and massing) of this type of development may be incongruous with smaller-scale field patterns, denser settlement pattern and dense distribution of human scale features (e.g. residential buildings, trees and woodland).

Historic landscape character

Table 2.7: Historic landscape character

Development Type	Low	Low-Medium	Medium	Medium-High	High
Wind	A landscape with relatively few historic features important to the character of the area and little sense of time depth. Evidence of past land use or settlement is minimal or has been largely lost, giving the landscape a predominantly modern or recently altered character with little or no perceived time depth.	A landscape with a small number of historic features important to the character of the area and some sense of time-depth. The landscape contains limited, isolated or faint historic features, with only minor evidence of past land uses or patterns. Time depth is present but not readily legible or influential in the overall perception of character.	A landscape with some visible historic features of importance to the character of the area, and a variety of time depths. The landscape shows several types or periods of historic influence, with a mixture of surviving features. Perceived time depth is noticeable but may be fragmented, overprinted or less coherent.	A landscape with many historic features important to the character of the area and a strong sense of time depth. Historic features and patterns are clearly expressed and make an important contribution to landscape character. Perceived time depth is evident through the continuity of past land uses, settlement forms or field patterns is readily apparent and generally well preserved.	A landscape with a high density of historic features important to the character of the area and extensive time depth. The landscape displays a rich, coherent and/or layered expression of history, with numerous well-preserved patterns and/or features. The perceived time depth, through continuity, is dominant and defines the landscape's character.
Solar PV/BESS	As for wind.	As for wind.	As for wind.	As for wind.	As for wind.
Large-scale development	As for wind.	As for wind.	As for wind.	As for wind.	As for wind.

Visual receptors

Table 2.8: Visual receptors

Development Type	Low	Low-Medium	Medium	Medium-High	High
Wind	An unpopulated landscape with few opportunities to engage in recreational activities where appreciation of the landscape is integral to the experience.	A sparsely populated landscape with limited opportunities to engage in recreational activities where appreciation of the landscape is integral to the experience.	A landscape with some recreational value/some opportunities to experience the landscape and some areas of settlement.	A landscape with high recreational value locally/frequent opportunities to experience the landscape and densely populated with many sensitive receptors.	A landscape with very high recreational value regionally/frequent opportunities to experience the landscape and densely populated with many sensitive receptors that experience a strong visual relationship to the landscape.
Solar PV/BESS	As for wind.	As for wind.	As for wind.	As for wind.	As for wind.
Large-scale development	As for wind.	As for wind.	As for wind.	As for wind.	As for wind.

Visual amenity (including skylines and intervisibility)

Table 2.9: Visual amenity (including skylines and intervisibility)

Development Type	Low	Low-Medium	Medium	Medium-High	High
Wind	An enclosed, self-contained landscape, or one with weak intervisibility with neighbouring areas. A landscape in which skylines are not prominent, and there are no important landmark features on the skyline.	A landscape with limited intervisibility neighbouring areas, and/or where adjacent areas of landscape are not visually related. A landscape in which skylines are simple, flat or gently convex and/or there are very few landmark features – other skylines in adjacent LCTs may be more prominent.	A landscape which has some inter-visibility with neighbouring areas. A landscape with some prominent skylines, but these are not particularly distinctive – there may be some landmark features on the skyline.	A landscape which is intervisible with several areas, and/or where adjacent areas are strongly interrelated. A landscape with prominent skylines or slopes that may form an important backdrop to views from settlements or important viewpoints, and/or with important landmark features.	A landscape which has important visual relationships with one or more neighbouring areas. A landscape with prominent or distinctive undeveloped skylines, very exposed and visible slopes, or with important landmark features on skylines.
Solar PV/BESS	As for wind.	As for wind.	As for wind.	As for wind.	As for wind.
Large-scale development	As for wind.	As for wind.	As for wind.	As for wind.	As for wind.

Perceptual and scenic qualities

Table 2.10: Perceptual and scenic qualities

Development Type	Low	Low-Medium	Medium	Medium-High	High
Wind	A landscape without attractive character, with no pleasing combinations of features, visual contrasts and/or dramatic elements, such as industrial areas or derelict land. A landscape with much human activity and modern development, such as industrial areas.	A landscape of limited attractive character, with few pleasing combinations of features, visual contrasts and/or dramatic elements. A semi-developed landscape with much human activity and dispersed modern influences, such as settlement fringes.	A landscape of intermittently attractive character, with occasional pleasing combinations of features, visual contrasts and/or dramatic elements. A semi-developed landscape with some modern influences and human activity, such as arable farmland.	A landscape of attractive character, with some pleasing combinations of features, visual contrasts and/or dramatic elements. A more naturalistic landscape and/or one with little modern human influence and development.	A landscape of consistently attractive character, with pleasing combinations of features, visual contrasts and/or dramatic elements. All or the vast majority is designated for its scenic qualities. A tranquil landscape with little or no overt sign of modern human activity and development.
Solar PV/BESS	As for wind.	A landscape with much human activity and modern development, such as industrial areas. A landscape of limited attractive character, with few pleasing combinations of features, visual contrasts and/or dramatic elements.	A developed or less developed landscape with much human activity and dispersed modern development, such as settlement fringes. A landscape of intermittently attractive character, with occasional pleasing combinations of features, visual contrasts and/or dramatic elements.	A relatively undeveloped landscape, with some modern development and human activity, such as arable farmland. A landscape of attractive character, with some pleasing combinations of features, visual contrasts and/or dramatic elements.	A more naturalistic landscape and/or one with little modern human influence and development. A landscape of consistently attractive character, with pleasing combinations of features, visual contrasts and/or dramatic elements. All or the vast majority is designated for its scenic qualities. A tranquil landscape with little or no overt sign of modern human activity and development.
Large-scale development	As for wind.	As for solar PV/BESS.	As for solar PV/BESS.	As for solar PV/BESS.	As for solar PV/BESS.

Making overall judgements on landscape sensitivity

2.65 As with all assessments that rely, to greater or lesser extent, on subjective data and information, the exercise of professional judgement is required and some caution should be applied in its interpretation. This is to avoid the suggestion that certain landscape features or qualities can automatically be associated with certain sensitivities – the reality is that an assessment of landscape sensitivity to development is the result of a complex interplay of variables (or 'criteria').

2.66 There may be one criterion that has a strong influence on landscape sensitivity in a particular LCA which increases the overall landscape sensitivity score (for example for solar PV this might be a landscape with a prominent/highly visible ridgeline or significant coverage of semi-natural habitats). There may also be criteria that produce conflicting scores. For example, a small-scale landscape with intact field patterns valued for its perceptual qualities and historic character may also afford greater screening of solar PV panels from topography and a dense network of walls or hedgerows. A conflicting example for wind energy development could be in the context of a settled landscape. While the landscape would have greater human influence (indicating a lower sensitivity to new development), it would also contain more human-scale features that could be affected by large-scale wind turbines and a higher density of sensitive residential or recreational receptors (indicating a higher sensitivity). Conversely, a more remote landscape is likely to lack human-scale features but is likely to present a higher sensitivity from a perceptual and scenic point of view. In these situations, a professional judgement is made on overall landscape sensitivity, taking all criteria into account in the context of their importance to the landscape character and quality of the individual area.

2.67 Landscape sensitivity is expressed on five-level scale from low sensitivity to high sensitivity. A landscape of higher sensitivity is likely to experience a greater impact on landscape character as a result of a given development type/scale, and a landscape of lower sensitivity is likely to experience a lesser impact on landscape character.

Presentation of results

2.68 The full landscape sensitivity assessments for each of the LCAs are presented in separate assessment profiles. These are structured as follows:

- A map of the LCA and representative photographs;
- An evaluation of the LCA against each of the assessment criteria;

- A landscape sensitivity assessment rating for wind energy, solar PV/BESS and other large-scale development types against each criteria;
- Landscape sensitivity scores for wind energy, solar PV/BESS and other large-scale development within each of the different development scenarios, using the five-level scale from low to high sensitivity;
- A summary of the landscape sensitivity of the LCA to wind energy, solar PV/BESS and other large-scale developments, referencing particular features, attributes or locations which may be more or less sensitive;
- Discussion of any variations to the overall LCA scores within the LCA; and
- The results presented in tabular form.

Summary and guidance

2.69 A comparative summary of overall landscape sensitivity within the local authority area including sensitivity maps for wind turbine, solar PV/BESS and other large-scale development is provided in **Chapter 3**. High level siting and design guidance is provided in **Chapter 4**, and more specific guidance for each LCA is provided in the individual LCA assessments in **Appendix A**.

Chapter 3
Landscape Sensitivity Assessment Results and Guidance

3.1 Overall sensitivity scores for each LCA within East Lothian are provided, but there can be variation within these. Where this occurs, this is explained in the relevant LCA assessment profiles contained in **Appendix A**.

3.2 The overall results of the landscape sensitivity assessment are set out in **Table 3.1**, **Table 3.2**, **Table 3.3** and **Table 3.4**, and illustrated in **Figures 7-10** at the end of this chapter.

Table 3.1: Overall landscape sensitivity to new wind energy development

LCA	<49.9m Tip Height	50m to 99.9m Tip Height	100m to 149.9m Tip Height	150m to 199.9m Tip Height	>200m Tip Height
Lammermuir Plateau	H	M-H	M-H	M-H	H
Lammermuir Plateau with Wind Farm	H	M-H	L-M	M-H	H
Whiteadder Upland Valley with Farmland	H	H	H	H	H
Plateau Grassland	M	M	M-H	H	H
Western Lammermuir Fringe	M	H	H	H	H
Eastern Lammermuir Fringe	M	H	H	H	H
Whittingehame Water	M-H	H	H	H	H
Gifford Water	M-H	H	H	H	H
Humbie Water	H	H	H	H	H

LCA	<49.9m Tip Height	50m to 99.9m Tip Height	100m to 149.9m Tip Height	150m to 199.9m Tip Height	>200m Tip Height
River Esk	M-H	H	H	H	H
Tranent Ridge	M-H	H	H	H	H
Garleton Hills	H	H	H	H	H
Lower Tyne Valley Plain	M	M	M-H	H	H
Mid Tyne Valley Plain	M	M	M-H	H	H
Coastal Plain	M	M	M-H	H	H
Settled Farmland	L-M	M	M-H	H	H
Innerwick Coastal Margin	M	M-H	H	H	H
Northern Coastal Margin	H	H	H	H	H
Musselburgh/ Prestonpans Fringe	L-M	M	H	H	H

Table 3.2: Overall landscape sensitivity to new solar PV development

LCA	Small-scale Solar PV	Medium-scale Solar PV	Large-scale Solar PV	Very Large-scale Solar PV
Lammermuir Plateau	H	H	H	H
Lammermuir Plateau with Wind Farm	M	M-H	H	H
Whiteadder Upland Valley with Farmland	M-H	H	H	H
Plateau Grassland	M	M	H	H

LCA	Small-scale Solar PV	Medium-scale Solar PV	Large-scale Solar PV	Very Large-scale Solar PV
Western Lammermuir Fringe	M	M-H	H	H
Eastern Lammermuir Fringe	M	M	M-H	H
Whittingehame Water	M-H	M-H	H	H
Gifford Water	M-H	M-H	H	H
Humbie Water	M-H	H	H	H
River Esk	M	M-H	H	H
Tranent Ridge	M	M	M-H	H
Garleton Hills	M-H	H	H	H
Lower Tyne Valley Plain	M	M	M-H	H
Mid Tyne Valley Plain	M	M	M-H	H
Coastal Plain	M	M	M-H	H
Settled Farmland	M	M	H	H
Innerwick Coastal Margin	M	M	H	H
Northern Coastal Margin	H	H	H	H
Musselburgh/ Prestonpans Fringe	L-M	M	H	H

Table 3.3: Overall landscape sensitivity to new BESS development

LCA	Small-scale BESS	Medium-scale BESS	Large-scale BESS	Very Large-scale BESS
Lammermuir Plateau	H	H	H	H
Lammermuir Plateau with Wind Farm	M	M-H	H	H
Whiteadder Upland Valley with Farmland	M-H	H	H	H
Plateau Grassland	M	M	M-H	H
Western Lammermuir Fringe	M-H	M-H	H	H
Eastern Lammermuir Fringe	M	M-H	M-H	H
Whittingehame Water	M-H	M-H	H	H
Gifford Water	M-H	M-H	H	H
Humbie Water	M-H	H	H	H
River Esk	M	M-H	H	H
Tranent Ridge	M	M	M-H	H
Garleton Hills	M-H	H	H	H
Lower Tyne Valley Plain	M	M	M-H	H
Mid Tyne Valley Plain	M	M	M-H	H
Coastal Plain	M	M	M-H	H
Settled Farmland	M	M	H	H
Innerwick Coastal Margin	M	M	M-H	H

LCA	Small-scale BESS	Medium-scale BESS	Large-scale BESS	Very Large-scale BESS
Northern Coastal Margin	H	H	H	H
Musselburgh/ Prestonpans Fringe	L-M	M	M-H	H

Table 3.4: Overall landscape sensitivity to other large-scale development

LCA	Other Large-scale Development
Lammermuir Plateau	H
Lammermuir Plateau with Wind Farm	M
Whiteadder Upland Valley with Wind Farm	H
Plateau Grassland	M-H
Western Lammermuir Fringe	H
Eastern Lammermuir Fringe	M-H
Whittingehame Water	M-H
Gifford Water	H
Humbie Water	H
River Esk	M-H
Tranent Ridge	M-H
Garleton Hills	H
Lower Tyne Valley Plain	M-H

LCA	Other Large-scale Development
Mid Tyne Valley Plain	H
Coastal Plain	M-H
Settled Farmland	M
Innerwick Coastal Margin	H
Northern Coastal Margin	H
Musselburgh/ Prestonpans Fringe	M-H

Chapter 4
Siting and Design Guidance

4.1 The following section provides guidance on siting renewable energy and other large-scale development in East Lothian, focussing on minimising landscape and visual effects. While it is recognised that schemes need to be sited and designed to ensure operational efficiency, this needs to be balanced with adequate consideration of potential adverse impacts, and mitigation where necessary. The siting and design of schemes is a key aspect of such mitigation.

4.2 General siting and design guidance is set out at the LCT level, which is applicable for each of the LCAs within that LCT. In addition, more specific guidance is provided for individual LCAs within the LCA assessments set out in **Appendix A**.

4.3 The guidance provided below and in the individual LCA assessments in **Appendix A** is not exhaustive and does not preclude the need for detailed assessments to inform site-specific design responses and the consideration of other relevant siting, design and management guidance.

Other relevant guidance documents

4.4 East Lothian Council's Special Landscape Areas Supplementary Planning Guidance provides specific management guidance in relation to each LCA, and specific guidelines for development and opportunities for landscape enhancement with relation to each SLA **[See reference** 1**]**.

4.5 The Tree and Woodland Strategy for East Lothian **[See reference** 8**]** provides guidance on the expansion and management of trees within East Lothian, with an aim of tackling climate change, improving resilience of the environment, aiding nature recovery and enhancing biodiversity.

4.6 NatureScot's Siting and Designing Wind Farms in the Landscape **[See reference** 9**],** provides guidance specifically relating to the siting of wind energy development.

4.7 The Scottish Government's Planning Guidance: Battery Energy Storage Systems **[See reference** 10**]** provides advice for those proposing BESS developments. With relation to landscape and visual effects, the document provides guidance on landscape design, site layout, and the scope of landscape and visual impact assessments (LVIA).

4.8 The Horlock Rules **[See reference** 11**]** provide specific guidance on the siting and design of substation development.

LCT guidance

4.9 The following provides high level guidance at the LCT level. This should be read in conjunction with LCA specific guidance (see **Appendix A**) and other relevant guidance documents mentioned above, and with considerations to the specific attributes of the proposed development and its site.

Uplands LCT

- Site development away from dramatic or rugged landform, instead prioritising large-scale, smooth, convex or flat landform.
- Site development in areas of simple and consistent landcover, avoiding areas which locally have a more irregular land cover pattern and/or greater visual diversity.
- Avoid selecting sites on important undeveloped or distinctive skylines, such as the prominent ridgeline of the Lammermuir Hills.
- Consider potential effects of transporting turbines, solar PV/BESS and other construction materials to site, and the possible limitations presented by winding narrow roads within the uplands.

Upland Fringes LCT

- Avoid selecting sites on undeveloped or distinctive skylines, or skylines with important landmark features.
- Select sites in a simple, regular landscape with extensive areas of consistent ground cover over a landscape with more complex or irregular land cover patterns, smaller field sizes and landscape with frequent human scale features.
- Avoid areas with a concentration of semi-natural habitats, which contribute to a sense of naturalness in the landscape.
- Consider potential effects of transporting turbines and solar PV/BESS and other construction material to site, and the possible limitations presented by winding narrow roads bounded by hedgerows and trees, or stone walls.

Lowland River Valleys LCT

- Site development away from small scale, intimate landform of the river valley, instead prioritising more open, flatter land in the surrounding areas.
- Avoid areas with a concentration of semi-natural habitats, which contribute to a sense of naturalness in the landscape, and site in areas with a more simple landcover such as agricultural land.
- Setting development within an existing or enhanced landscape framework of hedges, woodland and stone walls is preferable to changing the landscape pattern.
- Site development in areas where the field pattern is of a size capable of accommodating such development within the existing pattern, reducing the need to develop across several fields and obscuring the pattern of fields and landcover.
- Avoid important skylines and valley edges, where larger developments may appear overbearing when seen from within the valleys.

Lowland Hills and Ridges LCT

- Site development away from landform which, although not necessarily dramatic or rugged, are locally prominent landmark features.
- Avoid siting development on the upper slopes of locally prominent hills, where they may be widely visible from the surrounding area.
- Site development in areas of simple and consistent landcover, and seek to use existing landscape features and landform to screen lower-lying elements.

Lowland Plains LCT

- Consider locations associated or adjacent to existing hard surfacing or built elements (e.g. transport routes, industrial areas etc.), where other landscape sensitivities are not compromised.
- Select sites in a simple, regular landscape with extensive areas of consistent ground cover over areas with more complex land cover patterns and seek to maximise use of existing landscape features such as hedges and woodlands to help screen views of development.

- Consider potential effects of transporting materials to site, and the possible limitations presented by winding narrow roads bounded by hedgerows and trees, or stone walls, which can be problematic in rural areas.

Coastal Margins LCT

- Site development away from dramatic or rugged coastal landforms or valued landform features, and try to maintain open vistas out towards the sea.
- Significant effects on views from important viewpoints, recreational routes, destinations with important recreational value, popular tourist and scenic routes and settlements should be avoided where possible or minimised through careful siting.
- Select sites in more simple, regular landscapes with extensive areas of consistent ground cover, over landscapes with more complex or irregular land cover patterns, smaller field sizes and landscape with frequent human scale features.
- Consider sites where areas of existing landscape components, such as woodland, high hedgerows or a framework of walls, could screen lower-lying features of developments, rather than an open and unenclosed landscape.