Low Farm Solar Farm

Landscape and Visual Impact Assessment

for Boom Power Limited

June 2022

Landscapevisual

www.landscapevisual.co.uk

Contents:

Document information

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1.0 Introduction

1.1. This Report

1.1.1. Landscape Visual Limited was appointed by Boom Power Limited ('the Applicant') to prepare a landscape and visual impact assessment (LVIA) for a proposed solar farm ('the Proposed Development') on land at Low Farm, Wakefield Road, Grange Moor, Wakefield ('the Site').

1.1.2. This LVIA report considers the impact of the Proposed Development on the landscape of the Site and surrounding area, and on local visual amenity/views.

1.1.3. This work has been undertaken by Rob Pile BSc DipLA CMLI and Angus Jeffery BSc PhD (Cantab) CMLI, chartered landscape architects with over 30 years' combined experience of the assessment of a wide variety of development proposals.

1.2. The Existing Site

1.2.1. The Site comprises a total of eight parcels of land (plus an additional parcel required for the connection to the national grid), three to the south and six to the north of Wakefield Road, between Overton (approximately 700 m to the east-north-east) and Grange Moor (approximately 800 m to the west). Flockton lies approximately 75 m to the south of the southernmost field, and Briestfield lies approximately 1.2 km to the north of the Site. The Site location is shown on **Figures 1a**, **1b**, **1c** and **1d**[1].

1.2.2. The Site lies within Kirklees District and the county of West Yorkshire. The boundary between Kirklees District and Wakefield District lies immediately to the east of the Site.

1.2.3. The Site lies within the Green Belt, but outside of any national/statutory or local/non-statutory landscape designations. Green Belt is a planning designation, rather than a landscape designation, but the openness of the Green Belt does relate to landscape character and is therefore considered via a qualitative assessment in this LVIA.

[1] For brevity, within this document, figures are referred to without the project number 1282, i.e., **Figure 1a** and **Figure 1282/1a** are the same.

1.3. The Proposed Development

1.3.1. This LVIA considers the proposed development of the Site for a solar PV development and associated infrastructure (transformers, substation, security fencing and closed-circuit television). The Proposed Development is described in **Section 4** and shown on the plans contained in **Appendix 2**.

1.4. Methodology

1.4.1. The study was undertaken in accordance with the following key references:

- Landscape Institute (LI) and Institute of Environmental Management and Assessment (IEMA) (2013), *Guidelines for Landscape and Visual Impact Assessment: Third Edition.*[i]
- LI (2013), *GLVIA3 Statement of Clarification 1/13.*[ii]
- Natural England (2014), *An Approach to Landscape Character Assessment.*[iii]
- LI (2019), *Visual Representation of Development Proposals - Landscape Institute Technical Guidance Note 06/19.*[iv]
- LI (2021), *Assessing Landscape Value Outside National Designations – Landscape Institute Technical Guidance Note 02/21.*[v]
- The Building Research Establishment (BRE) (2013), *Planning guidance for the development of large scale ground mounted solar PV systems: Appendix A.*[vi]

1.4.2. The detailed LVIA methodology is contained in **Appendix 1**.

1.4.3. Fieldwork was undertaken in May 2021.

1.4.4. All measurements in this document are approximate and given to a level of accuracy which is appropriate to the appraisal and consideration of the Proposed Development's effects. Co-ordinates and heights are stated in relation to the Ordnance Survey (OS) datum unless otherwise stated.

1.5. Consultation

1.5.1. An Environmental Impact Assessment (EIA) screening opinion was requested from Kirklees Council (KC), and the screening opinion was received back at the end of May 2021. In relation to landscape and visual matters, the KC planning officer commented:

'A primary concern in this case is the visual impact of the proposal on the wider landscape. A solar farm covering an area of 85 hectares of land has the potential to be considerable. No details of a

possible site layout have been provided. However, the applicant has submitted extracts from a draft Landscape and Visual Impact Assessment, which includes a landscape strategy that details existing hedgerows, new hedgerows and new woodland planting as well as some existing views into the site.

'It is acknowledged that the site is elevated above other settlements in the District and it would represent a reasonably substantial change from the existing agricultural form of the land, which also lies within the Green Belt. However, based upon the information available, it is considered that due to the topography and existing landscape screening, the proposed development would not result in impacts of greater than local significance and it would not necessitate an EIA.'

1.5.2. In relation to Public Rights of Way (PROWs), the screening opinion states:

'There are a number of Public Right of Ways adjacent to the identified parcels. KIR/43/10 is located between Parcels 1 and 2, KIR/229/20 is located adjacent to parcel 1, KIR/103/50 is located adjacent to Parcel 4, and KIR/103/40 appears to be located partly within parcel 5. The impact on these public rights of way will be considered against Local and National Planning Policy as part of any future planning application, and the location of KIR/03/40 relative to parcel 5 will need to be confirmed. However, once again, the impact of the proposal on these PROWs is considered to be localised.'

1.5.3. In relation to trees and woodlands, the screening opinion states:

'Within some of the identified parcels of land, there are mature trees protected by Tree Preservation orders[2], and some parcels are adjacent to areas of Ancient Replanted Woodland (Grange, Hepper and Denby Woods).'

1.5.4. Visual impacts on the wider landscape are considered likely to be, '*reasonably localised due to the low level and the enclosed nature of the site and the existing mature vegetation around it, as well as the potential to provide additional planting mitigation*.'

1.5.5. The screening opinion also requires that cross-boundary effects should be considered:

'The site is adjacent to the boundary with Wakefield, and given the size and location of the proposed development, its impacts on the landscape locally are expected to be transboundary in respect of the visual impact. Whilst it is not considered to amount to EIA development, the Landscape and

[2] Tree Preservation Order (TPO)

Visual Impact Assessment would therefore need to consider views into the site from this neighbouring District.'

1.5.6. The screening opinion considered that an assessment of cumulative effects which might arise in conjunction with other similar developments in the local area was not necessary:

'It is not, therefore, considered that there would be significant cumulative impacts from other similar developments that would necessitate EIA.'

1.6. Approach to this Study

1.6.1. The following work stages have been undertaken:

1. Desk study collating information on potential receptors (landscape and visual).
2. Preparation of Geographic Information System (GIS)-based maps (the Figures list is in **Appendix 4**).
3. Fieldwork to photograph 13 representative viewpoints and assess the baseline landscape and visual environment.
4. Providing advice on landscaping as part of the Proposed Development.
5. Assessment of the value and susceptibility of the surrounding landscape/visual amenity, and thereby assess landscape and visual receptor sensitivity.
6. Assessment of potential direct and indirect impacts on the landscape and visual environment during construction, on completion, and in the long-term.
7. Preparation of photomontages to support the assessment.

2.0 Policy Context

2.1. National Planning Policy Context

2.1.1. This section highlights the key national planning policy context insofar as it relates to the landscape setting of the Site.

2.1.2. At the heart of the *National Planning Policy Framework* [vii](NPPF) (July 2021) is a presumption in favour of sustainable development. There are three over-arching objectives of sustainable development (economic, social and environmental). Of particular relevance to this assessment is the environmental objective, *'to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.'*

2.1.3. Paragraph 11 states, in relation to the presumption in favour of sustainable development, that:

> *'For decision-taking this means:*
>
> *c) approving development proposals that accord with an up-to-date development plan without delay; or*
>
> *d) where there are no relevant development plan policies, or the policies which are most important for determining the application are out-of-date8, granting permission unless:*
>
> *i. the application of policies in this Framework that protect areas or assets of particular importance provides a clear reason for refusing the development proposed7; or*
>
> *ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole.'*

2.1.4. In section 12, '*Achieving well-designed places*', paragraph 130 sets out policies and decisions for achieving well-designed places, ensuring that developments:

> *'a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;*
>
> *b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;*

c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);

d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming and distinctive places to live, work and visit;

e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and

f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users49; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.'

2.1.5. In section 15, 'Conserving and enhancing the natural environment', paragraph 174 sets out that:

'Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;…'

2.1.6. Paragraph 175 states:

'Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework58; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.'

2.1.7. Within Section 15 of the NPPF, the section 'Habitats and biodiversity', with regard to habitats and biodiversity paragraph 179(b) states:

'b) promote the conservation, restoration and enhancement of priority habitats, ecological networks

and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.'

2.1.8. The *National Policy Statement for Renewable Energy Infrastructure* [viii] (read with the overarching *National Policy Statement for Energy*[ix]) includes objectives and policies aimed at the understanding, protecting, managing and planning of the landscape and visual impact of proposals. Paragraph 2.4.2 notes that, '*Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology.*'

2.2. Local Landscape Planning Policy

2.2.1. Assessment work has shown that the main landscape and visual effects would arise in the Kirklees and Wakefield districts.

Kirklees District

2.2.2. This section contains a review of relevant KC planning policy.

2.2.3. The Kirklees Local Plan was adopted on 27 February 2019 and is the statutory development plan for Kirklees District. Policies considered to be of relevance to this assessment are as follows:

- **Policy LP1: Presumption in favour of sustainable development**

  'When considering development proposals, the council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. The council will always work pro-actively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area. Proposals that accord with the policies in the Kirklees Local Plan (and, where relevant, with policies in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise.

  'Where there are no policies relevant to the proposal or relevant policies are out of date at the time of making the decision then the council will grant permission unless material considerations indicate otherwise – taking into account whether:

  a. any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework

taken as a whole; or

b. specific policies in that Framework indicate that development should be restricted.'

- **Policy LP10: Supporting the rural economy**

'1. The economic performance of the rural economy will be improved by:

…

f. supporting farm diversification schemes, where the proposal would not adversely affect the management and viability of any farm holding, and in the case of farm shops, the goods to be sold are primarily those which are produced on the host farm or neighbouring farms.

2. In all cases where development is proposed in the Green Belt regard must be had to the relevant policies in this plan and relevant national planning policy.

3. Development proposals will not be supported where they would adversely impact on areas of particular environmental sensitivity, such as the Peak District National Park, and where proposals would lead to unsustainable development, contrary to other policies in the Local Plan.

…'

- **Policy LP24: Design**

'Good design should be at the core of all proposals in the district and should be considered at the outset of the development process, ensuring that design forms part of pre-application consultation of a proposal. Development briefs, design codes and masterplans should be used to secure high quality, green, accessible, inclusive and safe design, where applicable. Where appropriate and in agreement with the developer schemes will be submitted for design review.

'Proposals should promote good design by ensuring:

a. the form, scale, layout and details of all development respects and enhances the character of the townscape, heritage assets and landscape;

…

h. development contributes towards enhancement of the natural environment, supports biodiversity and connects to and enhances ecological networks and green infrastructure;

i. the retention of valuable or important trees and where appropriate the planting of new trees and

other landscaping to maximise visual amenity and environmental benefits; and

…'

- **Policy LP26: Renewable and low carbon energy**

'Renewable and low carbon energy proposals (excluding wind) will be supported and planning permission granted where the following criteria are met:
a. the proposal would not have an unacceptable impact on landscape character and visual appearance of the local area, including the urban environment;
b. the proposal would not have either individually or cumulatively an unacceptable impact on protected species, designated sites of importance for biodiversity or heritage assets;
c. the statutory protection of any area would not be compromised by the development;
d. any noise, odour, traffic or other impact of development is mitigated so as not to cause unacceptable detriment to local amenity;
e. any significant adverse effects of the proposal are mitigated by wider environmental, social and economic benefits.
Where the above criteria are met, the council encourages dialogue with local community groups promoting community renewable and low carbon energy schemes.
…'

- **Policy LP32: Landscape**

'Proposals should be designed to take into account and seek to enhance the landscape character of the area considering in particular:
a. the need to protect the setting and special qualities of the Peak District National Park, views in and out of the park and views from surrounding viewpoints;
b. the setting of settlements and buildings within the landscape;
c. the patterns of woodland, trees and field boundaries;
d. the appearance of rivers, canals, reservoirs and other water features within the landscape.'

- **Policy LP33: Trees**

'The Council will not grant planning permission for developments which directly or indirectly threaten trees or woodlands of significant amenity.
Proposals should normally retain any valuable or important trees where they make a contribution to public amenity, the distinctiveness of a specific location or contribute to the

environment, including the Wildlife Habitat Network and green infrastructure networks. Proposals will need to comply with relevant national standards regarding the protection of trees in relation to design, demolition and construction. Where tree loss is deemed to be acceptable, developers will be required to submit a detailed mitigation scheme.'

2.2.4. There are no specific policies in the Kirklees Local Plan relating to renewable energy development in the Green Belt.

Wakefield District

2.2.5. The adopted local plan for Wakefield (to 2026) comprises the Core Strategy and accompanying Development Policies. Policies which are considered relevant to this assessment include:

- **Policy CS10: Design, Safety and Environmental Quality**

'Good design is a key element in sustainable development. Improving our places through raising the quality of the built environment is one of the Community Strategy's underpinning challenges and also a key part of urban renaissance. The design of buildings and spaces will be improved and opportunities for crime reduced. The district's built environment, landscape features and wildlife habitats will be protected and enhanced. Protected ecological and geological sites cover just 2% of the district's land area and tree cover is only 3.8%, one of the lowest percentages in the country. A number of Scheduled Ancient Monuments, Conservation Areas, historic buildings, archaeological remains and historic landscapes contribute to the local distinctiveness and character of the district. In all parts of the district, new development will:

a. incorporate sustainable buildings, spaces and landscaping of high quality design which:

i. are appropriate to their location in terms of scale and density;

ii. protects and enhances local character and distinctiveness taking local building traditions into account;

iii. takes into account the different landscape character across the district, including the Calder Valley, the Northern Coalfield areas, the Went River basin, the Limestone Escarpment and the south-east and south-west coalfield areas.

b. create safe and secure environments that reduce the opportunities for crime in all parts of the district;

c. protect and enhance the district's historic assets particularly Scheduled Ancient Monuments, Conservation Areas, historic buildings, archaeological remains and historic landscapes;

d. protect and enhance the district's biological and geological diversity and green infrastructure including the need to increase tree cover across the district, safeguard designated sites of international, national, regional and local importance, ancient woodland and other ecological assets, including priority habitats and species;

…

g. helping reduce fossil fuel dependency, by promoting designs which incorporate energy efficiency and renewable energy generation technology.'

- **Policy CS11: Leisure, Recreation and Open Space**

'…

3. Development proposals will not result in the loss of an existing leisure or recreation facility or open space unless satisfactory alternative provision is made or there are cumulative community benefits identified as part of regeneration schemes or it can be demonstrated that the asset is no longer needed.

4. Within designated open land areas, development will not be permitted except in very special circumstances for purposes other than those which would be appropriate in a rural area and which would not substantially affect the character of the land or detract from its amenity value.'

- **Policy CS12: Green Belt**

'The general extent of the Green Belt defined on the Local Development Framework Proposals Maps, should remain unchanged.

A review of the boundaries in association with a strategic review of the West Yorkshire Green Belt, will inform the identification of sites for delivering growth that is consistent with the spatial development strategy.

Only in exceptional circumstances where there is an overriding need to accommodate what would otherwise be inappropriate development, which cannot be met elsewhere and where Green Belt land offers the most sustainable option, will land be taken out of the Green Belt.'

- **Policy CS13: Mitigating and Adapting to Climate Change and Efficient Use of Resources**

'2. In order to achieve the indicative renewable energy generation target for the district of 11 megawatts by 2010 and 41 megawatts by 2021 and to contribute to sub-regional and regional

targets the Council will:

a. encourage the development of new sources of renewable energy generation where there is no adverse

environmental impact on nearby communities;

…'

- **Policy D7: Protection of Trees and Woodland**

'The district's woodland, hedgerows and trees are important ecological assets identified in the Wakefield District Local Biodiversity Report. Where the Council considers that trees or woodland may be affected by a development proposal, it will require an appropriate tree survey to be submitted with the planning application.

1. Development that would detrimentally affect or result in the loss of Ancient Woodland will only be permitted if it can clearly be demonstrated that:

a. development cannot reasonably be located on an alternative site; and

b. exceptional reasons of public interest for development clearly override the ecological and historical importance of Ancient Woodland; and

c. the need for development clearly outweighs any harm which may be caused to the ecological and landscape value of the woodland; and

d. harm can be reduced to acceptable limits through the implementation of positive environmental mitigation measures within the site.

2. Development that would damage or result in the loss of trees, particularly veteran trees, areas of woodland or hedgerows, will only be permitted if it can clearly be demonstrated that:

a. development cannot reasonably be redesigned or located on an alternative site; and

b. the need for development clearly outweighs any harm to the ecological value and landscape quality of the area; and

c. harm can be reduced to acceptable limits through the implementation of positive environmental mitigation measures either on site or in a suitable alternative location.'

- **Policy D8: Landscape Character**

'Landscape is an important and highly valued environmental resource within Wakefield District. Development within the countryside, on the edge of settlements or within areas of open urban green space shall contribute towards the protection, maintenance and enhancement of the

character of the district's landscape, its biodiversity, and where appropriate, the recreational quality of the area. The Council may require an evaluation of the impact of development on the landscape to be submitted with development proposals. Impact upon the landscape will be assessed having regard to the extent to which development would:
a. adversely affect landscape elements which contribute to landscape character such as landform, field boundaries, or settlement patterns;
b. adversely affect vegetation and trees which are characteristic of that landscape type;
c. cause unacceptable visual intrusion; and
d. introduce or remove incongruous landscape elements.'

- **Policy D12: Landscape Design**

'Landscape is an important and highly valued environmental resource within Wakefield District. New development shall be designed so that important existing landscaping features such as water bodies, trees, hedgerows, stone walls and other elements identified in the Landscape Character Assessment together with any new features are incorporated as an integral part of the proposal. In particular development proposals shall:
a. conserve and integrate existing natural features;
b. use new landscape features such as planting, shelter belts, and green spaces to integrate development with the wider landscape;
c. integrate new and existing development at the boundaries of the site through the continuity of landscape;
d. create areas of valuable habitat for wildlife by additional planting of native species rather than by using purely decorative planting; and
e. where appropriate allow public access and/or provide opportunities for recreation.'

2.2.6. The draft Wakefield District Local Plan 2036 was formally submitted to the Secretary of State at the start of May 2021 for independent examination. At the time of this assessment the draft local plan was therefore considered to carry only limited weight. The following policies are however considered to be relevant to this LVIA:

- **Policy WSP 1: Presumption in Favour of Sustainable Development**

'When considering development proposals the Council will take a positive approach reflecting the presumption in favour of sustainable development contained in the National Planning

Policy Framework. It will work proactively with applicants to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.

Planning applications that accord with the policies in the development plan (including, where relevant, polices in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise.

Where there are no development plan policies relevant to the application or the policies which are most important for determining the application are out of date at the time of making the decision the Council will grant permission, unless material considerations indicate otherwise, unless:

1. The application of policies in the National Planning Policy Framework protecting areas or assets of particular importance provides a clear reason for refusing the development proposed; or

2. Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole.'

- **Policy WSP 21: Green Belt (AMENDED)**

'The general extent of the Green Belt will remain unchanged.

A review of the Green Belt boundaries will only be undertaken in association with the Wakefield District Local Plan in order to inform the identification of sites for delivering growth that is consistent with the spatial development strategy.

Only in exceptional circumstances where there is an overriding need to accommodate what would otherwise be inappropriate development, which cannot be met elsewhere and where Green Belt land offers the most sustainable option, will land be taken out of the Green Belt.

Where land is removed from the Green Belt for development, the impact will be offset through compensatory improvements to the quality of the environment and accessibility of the remaining Green Belt. This may be achieved by:

- *Creating green infrastructure such as recreational green spaces and landscaped zones;*
- *Creating green corridors to provide pedestrian and cycling links with adjoining areas of countryside, green infrastructure and recreational open space;*
- *Creating wildlife habitat, woodland and other ecological enhancements, and*

- **Making provision for appropriate management of new infrastructure, corridors, habitats and species on adjoining land.' Policy WSP 22: Design, Safety and the Local Environment (AMENDED)**

  'The design of buildings and spaces will be improved and opportunities for crime reduced. The district's historic, built environment, landscape features and wildlife habitats will be protected and enhanced. They contribute to the local distinctiveness and character of the district. In all parts of the district, new development will:

  a. Incorporate sustainable buildings, spaces and landscaping of high-quality design which;

  i. Are appropriate to their location in terms of scale and density;

  ii. Protects and enhances local character and distinctiveness taking local building traditions into account;

  iii. Takes the different landscape character across the district, including the Calder Valley, the Northern Coalfield areas, the Went River Basin, the Limestone Escarpment and the south-east and south-west coalfield areas into account.

  …

  d. Protect and enhance the district's historic assets and their contribution to the local distinctiveness and character of the district. This will be in accordance with their significance, particularly Scheduled Ancient Monuments, Conservation Areas, historic buildings, archaeological remains and historic landscapes;

  e. Protect and enhance the district's biological and geological diversity and green infrastructure including the need to increase tree cover across the district, safeguard designated sites of international, national, regional and local importance, ancient woodland and other ecological assets, including priority habitats and species;

  …

  h. Help reduce fossil fuel dependency, by promoting designs which incorporate energy efficiency and renewable energy generation technology.'

- **Policy WSP 23: Mitigating and Adapting to Climate Change and Efficient Use of Resources (AMENDED)**

  '…

  3. In order to contribute to the UK 2050 net zero carbon emissions target and the objectives of the Council's Climate Emergency Resolution and Action Plan the Council will:

a. encourage the development of new sources of renewable energy generation where there is no adverse environmental impact or harm to nearby communities;

…'

- **Policy WLP 23: Strategic Leisure Corridors**

'New and improved routes for walking, cycling and horse riding will be supported. Within Strategic Leisure Corridors the enhancement of existing routes and creation of new links to improve access and outdoor recreational activities will be prioritised. Development within or adjoining Strategic Leisure Corridors shall maintain public access, contribute to enhancement of the corridor and where appropriate, provide new links and recreational opportunities.'

- **Policy WLP 33: Assessment of Applications for Renewable Energy Generation Developments**

'Proposals for renewable and low carbon energy development will be supported and planning permission granted provided they will not have an unacceptable impact on:

a. Landscape character and visual appearance of the local area, including the urban environment;

…

d. Heritage assets and their character, appearance and setting;

e. The statutory protection of any area;

…

h. The potential for cumulative effects with other existing or proposed energy developments.

The extent to which harm can be reduced to an appropriate level through mitigation will be taken into account when assessing effects.

Proposals must include information to show how the local environment will be protected, and that the site will be restored when production ends.

Priority will be given to:

a. Established and proposed industrial sites; and

b. The use of other previously-developed land before greenfield sites

Proposals in the Green Belt will conform to national and local policies relating to the Green Belt.

Where the above criteria are met, the council encourages dialogue with local community groups

promoting community renewable and low carbon energy schemes.
As the Local Plan does not identify any areas as suitable for wind energy development the policy does not apply to wind turbines, which will be considered against National Planning Policy.'

- **Policy WLP 47: Protected Areas of Open Land**

'Areas of Protected Open Land identified on the Policies Maps shall be safeguarded from development to maintain local character and amenity of settlements and their communities. Within the areas of open land identified under this policy, development will only be permitted in very special circumstances for purposes other than those which would not substantially affect the openness and character of the land or detract from its amenity value.'

- **Policy WLP 52: Protection of Trees and Woodland (AMENDED)**

'The district's woodland, hedgerows and trees are important ecological assets identified in the Wakefield District Local Biodiversity Report. Where the Council considers that trees or woodland may be affected by a development proposal, it will require an appropriate tree survey to be submitted with the planning application.
1. Development that would detrimentally affect or result in the loss of Ancient Woodland and veteran trees will be refused unless there are wholly exceptional reasons and a suitable compensation strategy, in accordance with National Planning Policy.
2. Development that would damage or result in the loss of trees, areas of woodland or hedgerows, will only be permitted if it can clearly be demonstrated that:
a. Development cannot reasonably be redesigned to retain trees and hedgerows or be located on an alternative site; and
b. The need for development clearly outweighs any harm to the ecological value and landscape quality of the area; and
c. There will be an overall net gain for biodiversity commensurate with the scale of the development, including a positive contribution to the protection, creation and enhancement of habitat and species.'

- **Policy WLP 53: Landscape Character**

'Landscape is an important and highly valued environmental resource within Wakefield

District. Development within the countryside, on the edge of settlements or within areas of open urban green space shall contribute towards the protection, maintenance and enhancement of the character of the district's landscape, its biodiversity, and where appropriate, the recreational quality of the area. The Council may require an evaluation of the impact of development on the landscape to be submitted with development proposals. Impact upon the landscape will be assessed having regard to the extent to which development would:

a. Adversely affect landscape elements which contribute to landscape character such as landform, field boundaries, or settlement patterns;

b. Adversely affect vegetation and trees which are characteristic of that landscape type;

c. Cause unacceptable visual intrusion; and

d. Introduce or remove incongruous landscape elements.'

- **Policy WLP 57: Landscape Design (AMENDED)**

  'Landscape is an important and highly valued environmental resource within Wakefield District. New development shall be designed so that important existing landscaping features such as water bodies, trees, hedgerows, stone walls and other elements identified in the Landscape Character Assessment together with any new features are incorporated as an integral part of the proposal. In particular development proposals shall:

  a. Conserve and integrate existing natural and historic features;

  b. Use new landscape features such as planting, shelter belts, and green spaces to integrate development with the wider landscape;

  c. Integrate new and existing development at the boundaries of the site through the continuity of landscape;

  d. Create areas of valuable habitat for wildlife by additional planting of native species rather than by using purely decorative planting; and

  e. Where appropriate allow public access and/or provide opportunities for recreation.'

3.0 Landscape and Visual Baseline Conditions

3.1. Landscape Baseline

National Landscape Character

3.1.1. At the broader, national scale, the Site lies towards the western side of National Character Area (NCA) 38: *Nottinghamshire, Derbyshire and Yorkshire Coalfields*, as defined by Natural England[x]. Relevant key characteristics of the NCA are described as:

- *'A low-lying landscape of rolling ridges with rounded sandstone escarpments and large rivers running through broad valleys, underlain by Pennine Coal Measures.*
- *Local variations in landscape character reflecting variations in underlying geology.*
- *Several major rivers flow through the rural and urban areas of the NCA, generally from west to east in broad valleys.*
- *A mixed pattern of built-up areas, industrial land, pockets of dereliction and farmed open country.*
- *Small, fragmented remnants of pre-industrial landscapes and more recent creation of semi-natural vegetation, including woodlands, river valley habitats and subsidence flashes, with field boundaries of clipped hedges or fences.*
- *Many areas affected by urban fringe pressures creating fragmented landscapes, some with a dilapidated character, separated by substantial stretches of intact agricultural land in both arable and pastoral use.*
- *A strong cultural identity arising from a history of coal mining, steel making and other heavy industry which resulted from the close relationship between underlying geology and resource availability, notably water-power, iron ore and coal.*
- *Features of industrial heritage such as mills, goits, tips, old railway lines, canals and bridges are evident, along with former mining villages.*
- *Many large country houses and estates established by wealthy industrialists in the 18th and 19th centuries and ancient monuments create focal points and important recreational opportunities within the landscape, such as Bretton Hall, Wentworth, Woodhouse, Temple Newsam, Nostell Priory, Bolsover Castle and the ruins of Codnor Castle.*
- *Extensive urbanisation, such as in the major cities of Leeds and Sheffield, with terraced and back-to-back housing and grand 19th-century municipal buildings and churches at their centres, now surrounded by extensive housing and industrial development.*
- *Widespread influence of transport routes, including canals, roads and railways, with ribbon*

developments emphasising the urban influence in the landscape.

- *An extensive network of multi-user trails on former railway lines and canal towpaths, such as the Trans Pennine Trail and the Ebor Way.*
- *Continuing development pressure including land renewal and regeneration projects, especially along river corridors and around towns.'*

3.1.2. NCA37: *Yorkshire Southern Pennine Fringe*[xi] lies just over 2 km to the north-west of the Site at its closest, and there could be some very limited visibility of the Proposed Development from certain locations on the south-eastern edge of the NCA. NCA37 is described as, *'a transitional landscape from the upland areas of the Southern Pennines NCA in the west through to the low-lying land of the Nottinghamshire, Derbyshire and Yorkshire Coalfield NCA to the east. The most striking aspect of the landscape is the mingling of predominantly 'gritstone' industrial towns and villages with the strong valley forms and pastoral agriculture of the Pennine foothills. The gritstone industrial buildings and settlements bring a sense of visual unity to the landscape. The landscape is dominated by industrial buildings and structures such as factories, chimneys, railways and canals.'*

Kirklees District Landscape Character Assessment

3.1.3. At a local level, the landscape character of the Site and the surrounding study area to the north, west and south is described within the *Kirklees District Landscape Character Assessment* (KDLCA)[xii]. The KDLCA places the Site within the *Rolling Wooded Farmland* Landscape Character Type (LCT), and more specifically within Landscape Character Area (LCA) *N1: Emley Moor*: '*This LCA consists of the main expanse of Emley Moor, which rises up to the east of the Fenay Beck valley and occupies a large area in the south east of Kirklees District adjacent to Wakefield District.'*

3.1.4. The key characteristics of LCA *N1* are described as:

'Topography, geology and drainage

- *Elevated, undulating farmland plateau, which reaches heights of up to 265m AOD*[3].
- *Crossed by small dykes and becks, some of which originate on the higher ground within the LCA.*
- *This area is part of the South Yorkshire Coalfield, with Millstone Grit overlain by the mudstone,*

[3] Above Ordnance Datum

siltstone and sandstone of the Pennine Coal Measures, with seams rich in coal and iron.

Woodland cover

- *Frequent woodland cover, with a mixture of broadleaved copses and plantation, although this is generally scattered across the moor and large blocks of woodland are not a common occurrence.*
- *Woodland is generally found in blocks with straight edges which are coincident with field boundaries.*
- *In-field trees are uncommon.*

Agricultural land use and field patterns

- *Mixed field pattern, with the scale of the fields dictated by the topography of the land. Hedges, post and wire fencing and gritstone walls enclose the fields.*
- *Fields are generally improved pasture with some limited arable coverage.*

Semi-natural habitats

- *There are patches of acidic grassland amongst farmland, along with areas of bracken and gorse.*
- *Woodlands are locally valued for wildlife, including Kirkby Wood Local Wildlife Site.*

Archaeology and cultural heritage

- *Provides a setting to the Thornhill and Hope Pit Conservation Areas. Part of the Bretton Hall Registered Park and Garden[4] is located in the east of the LCA.*
- *Many of the LCA's buildings are of a traditional gritstone built vernacular.*
- *Several Scheduled Monuments including the remnants of Thornhill Hall and its moat and grounds, which were ruined during the English Civil War. Village of Emley dates from Anglo-Saxon times and is recorded in the Domesday Book. The church of St. Michael is a Grade I listed building and its earliest parts date from Norman times.*
- *Rich coal mining heritage, with prehistoric iron ore mining also being evident in the landscape. There are designated remains of day holes (adits); medieval mines.*

Settlement and road pattern

- *Small rural villages occupy the area, namely Flockton, Emley and Grange Moor. The area is mainly serviced by minor roads.*
- *The larger A642 and A637 cross the area near Grange Moor.*

Views and perceptual qualities

- *Emley Moor transmitting station is located one mile west of Emley, which at 330m tall is the tallest*

[4] Registered Park and Garden (RPG)

free-standing structure in the UK and is a prominent feature from across the district. At night the tower is lit by red lights.

- *Predominant traditional rural character. The medieval tower of St Michael's Church in Emley is also a valued local landmark.*
- *Long views north and east towards Huddersfield and Wakefield are afforded by height of the land, but are sometimes interrupted by trees and undulation of the ground.*
- *The Peak District National Park is visible from Flockton Moor, which also overlooks the Fenay Beck Valley to the west (LCA G9).'*

3.1.5. The published landscape evaluation makes the following specific observations in relation to *'valued landscape features and attributes'* which are of relevance to this LVIA:

- *'Cultural and historical: mining remnants at Caphouse Colliery* [part of the National Coal Mining Museum for England and close to the eastern part of the Site].
- *Perceptual qualities (including levels of tranquility): the LCA is largely associated with important relative levels of tranquility, with a traditional rural character, although the presence of main roads in the north of the LCA can detract from this on a local scale.*
- *Role as a setting to development: this LCA forms an immediate setting to the settlements of Emley Moor, Flockton and Grange Moor...*
- *Access and enjoyment of the landscape: the Kirklees Way crosses through the eastern part of the LCA and goes through Flockton, while there are other locally promoted routes including the Emley Circular Trail and the Emley Village Walk.*
- *There is a dense network of more minor footpaths and bridleways throughout the LCA.*
- *Contribution to the setting of the Peak District National Park: although it is some distance from the Peak District National Park, there are distant views to and from the protected landscape from the higher land in the west of the LCA* [the Site lies outside of these areas].*'*

3.1.6. The KDLCA does not provide a formal assessment of landscape sensitivity for the different LCAs.

3.1.7. Land to the north and north-west of the Site falls within the *Rural Fringes* LCT, and specifically within LCA *E7: Emley Moor Northern Fringes*: '*This LCA consists of one contiguous area, contained fully within Kirklees District, located to the east of Huddersfield and forming a rural fringe to the north of Emley Moor.'*

3.1.8. Relevant key characteristics of LCA *E7* are described as:

'Topography, geology and drainage

- *Gently undulating elevated slopes which fringe the moors to the south, found between approximately 60 and 200 metres altitude. The landscape drops in elevation towards the River Calder to the north.*

- *Local variations in topography create some areas of more complex landform, deeply incised by valleys through which small tributaries and watercourses flow (e.g. Howroyd Beck and Valance Beck).*
- *Bedrock geology is formed from the Lower and Middle Pennine Coal Measures Groups, similar to the wider area.*

Woodland cover

- *Abundant woodland cover, particularly on the steep valley slopes.*
- *There are also frequent trees along field boundaries and in fields, as well as numerous blocks of broadleaved woodlands, particularly to the east of Upper Hopton.*

Land use and field patterns

- *Smaller scale pattern of grassland pastures enclosed by gritstone walls as well as some hedgerow boundaries.*
- *Majority of the fields are improved and grazed by a mix of both cattle and sheep. Horse paddocks are also frequent, particularly around settlements.*

Semi-natural habitats

- *There are areas of acid grassland, scrub, hay meadow and wet pasture providing interest and texture amongst the improved grassland.*
- *Larger areas of broadleaved woodland are a locally important resource for wildlife, including Liley Wood and Whitley Wood.*

Archaeology and cultural heritage

- *Disused quarries and shafts are scattered across the landscape, reflecting the area's industrial heritage…*

Settlement and road pattern

- *Dense network of minor roads and narrow winding lanes, which link the area to the urban centres focused to the north and west.*
- *Distinctive settlement character of scattered farms, individual rural houses and groups of dwellings clustered into small villages, a number of larger settlements also exist (including Kirkheaton and Upper Hopton). Buildings are typically of a traditional stone vernacular.*
- *Proximity of the urban centres exerts an influence on landscape character with urban fringe land uses*

evident in many areas, a number of large overhead pylons also cross through this area.

Views and perceptual qualities

- *Although often well-treed, longer distance views, typically focused to the north, reveal the more densely settled lower lying urban areas. These include long views east towards Wakefield District from higher ground.*
- *A strongly rural landscape, which in areas characterised by a dense network of narrow winding lanes and woodland, retaining a tranquil character.'*

3.1.9. The published landscape evaluation makes the following specific observations in relation to *'valued landscape features and attributes'* which are of relevance to this LVIA:

- *'Perceptual qualities (including levels of tranquillity): comparatively rural and tranquil especially compared to the settled Calder Valley below (LCA M1), although traffic noise from the M6 (to the east of the district) is evident.* [Author's note: this should refer to the M1, not the M6].
- *Role as a setting to development: this LCA forms an immediate rural setting to several settlements, including Kirkheaton, Upper Hopton, Lower Hopton, Briestfield and Whitley Lower. It also provides a valued elevated backdrop to Lepton and Thornhill.*
- *Access and enjoyment of the landscape: the Kirklees Way crosses through the eastern part of the LCA, whilst part of National Cycle Route 66 is found in the north west corner of the LCA. There is also a dense network of other rights of way, particularly providing access to the many woodland areas in the LCA. Small patches of Open Access Land are found close to Lower Hopton and Thornhill.'*

3.1.10. The Site lies beyond the boundary of this LCA, and effects on the LCA would be therefore experiential/perceptual only, limited to the south-eastern part of the LCA.

3.1.11. As previously noted, land to the east of the Site lies within Wakefield District and is therefore described in the Landscape Character Assessment of Wakefield District (LCAWD)[xiii].

3.1.12. The assessment places the land to the east of the Site within the *South West Coalfield* LCT, while the valley of the River Calder to the north-east of the Site is placed in the *Calder Valley* LCT. There could be some very limited visibility of the Proposed Development from the western and south-western edges of these LCT respectively.

3.1.13. The *South West Coalfield* LCT is described thus:

'The south western part of the District is the fringe of a zone of transition between Pennine foothills and lowland river valley. This area is characterised by village settlements on high ridges. A significant amount of ancient woodland survives, and a reasonable amount of hedgerows, although many have been cleared. Dry stone walls of local sandstone also form some boundaries, which are unique to the south western side of the District. Numerous becks flow into the River Calder, their valleys tend to be steep sided and wooded. The area has been mined for coal and iron since the medieval period, however few traces remain following restoration. The area retains its rural character, and has escaped the urbanisation of the South Eastern Coalfield. Villages have expanded for residential rather than industrial reasons. Villages such as Crigglestone, Durkar and Sandal have been absorbed into the wider urban area of Wakefield, and much of the surrounding rural landscape has been lost as a result of this suburbanisation.

'Country parks are predominant in the area, Bretton, Woolley, Notton, Chevet, Newmillerdam, and Walton were all significant country estates. They occupy large tracts of the landscape and have important recreational uses for residents and visitors to the District, including the Yorkshire Sculpture Park, historic park and nature reserve at Bretton; Newmillerdam country park/nature reserves; Woolley, Sandal and Walton golf courses. Bretton Hall is now a university art college, Walton Hall a hotel, and Woolley Hall a conference/education centre.'

3.1.14. Specifically, the Middlestown, Netherton, Midgley and West Bretton part of the LCT is described thus:

'This is one of the highest parts of the District, rising to 165m. It is cut through with the steep sided valleys of Coxley Beck, Blacker Beck, and Bullcliff Beck, which feed into the River Calder, and Bentley Beck running into the River Dearne. There are significant areas of ancient woodland at Stony Cliffe/Perkin Woods (SSI & Nature Reserve), Bullcliff Wood, Bank Wood, New Hall Wood SSSI[5] and Denby Grange Ponds SAC. Stocksmoor Common, Midgley is a Nature Reserve. Bretton Park is a Historic Park/Garden, its lakes and part of the grounds are also an SSI and LNR[6].

'More hedgerows survive in this area than elsewhere in the District, however significant amounts

[5] Site of Special Scientific Interest (SSSI)

[6] Local Nature Reserve (LNR)

have been removed. Some dry sandstone walls also exist, but these tend to be fragmentary and poorly maintained. Arable agriculture is predominant although cattle and sheep are grazed in part of Bretton Park.

'Significant features include Smithy Brook and Emroyd Common; Bentley Brook and Bank Wood; Bretton Park; the Coxley Valley with New Hall, Stony Cliffe and Perkin woods; Blacker Beck and Bullcliff Wood; and Stocksmoor Common. There is a good network of footpaths and some bridleways that link these areas.'

3.1.15. The *Calder Valley* LCT is described as:

'The valley consists of a flat flood plain of varying widths through which the River Calder meanders, which is cut by the Aire and Calder Navigation. There are distinctly steep edges and terraces to the valley at Storrs Hill, Ossett, which rises 60m from the river level, and at Heath and Kirkthorpe which rises to 30m. Elsewhere the valley sides are less steep, gradually diminishing as the river passes eastwards. The valley bottom widens significantly at Pugneys and Welbeck to the east of Wakefield, and opens out at the confluence with the River Aire north of Castleford.

'There is little woodland in the valley, it tends to survive around escarpments such as Hartley Bank Wood, Netherton, and at Heath and Kirkthorpe, or in abandoned quarries and coal workings. There are few hedgerows, those which survive are in decline and largely unmanaged. The valley bottom has large areas of open water, many as a result of mineral extraction such as Horbury Lagoon, Pugneys and Southern Washlands.

'There are also a significant number of smaller natural flashes, oxbows and wetlands. Some pockets of unused land between the canal and river contain wetlands and scrub, particularly around Horbury Junction and Horbury Bridge.

'The Calder valley is a corridor of considerable ecological importance and significant recreational value. To the east of Wakefield the valley contains several important wetland sites, many of which are of Sites of Scientific Interest and/or Local Nature Reserves. To the west of Wakefield the steep valley sides offer excellent vantage points at Storrs Hill and Sandal Castle. There are expanses of publicly managed land at Pugneys Country Park, Horbury Lagoon, Millfield Lagoon, Thornes Municipal Golf Course, and Thornes Park in Wakefield. These are linked by a network of footpaths, cycle routes, and the canal towpath.

'The Calder Valley is also a major transport corridor and important in terms of employment having industrial areas alongside the river at Healey, Horbury and Wakefield. The M1 cuts the Calder

Valley between Horbury and Thornes. There are also a number of abandoned mineral railways and spurs linking into the Trans-Pennine and North East railways that dissect the valley. The valley bottom contains a significant number of old mills and diverse industrial uses, including sidings, which vary in environmental quality in terms of occupancy, types of use, state of repair and visual impact on their neighbourhoods. There are some areas in need of regeneration such as Horbury Bridge and parts of Wakefield Waterfront and the old power station site. Significant areas of open land have been blighted by coal workings and tips such as Welbeck (due to be restored by 2018), and the derelict Newmarket Silkstone Colliery to the north of Wakefield.'

Landscape Character of the Site and Surrounding Area

3.1.16. Photographs of the Site and its immediate surroundings are shown in **Figure 10**. Key views to the Site (representative viewpoints) are shown in **Figures 8** and **9**.

3.1.17. The Site comprises eight parcels of land for the solar panels and associated infrastructure, plus a ninth parcel to be used for the connection to the national grid – see **Figures 1c** and **1d**. Some of the parcels comprise multiple fields, while others are formed by single fields. The fields are used predominantly for arable cropping and are of varying shapes and sizes, ranging from relatively small (Parcel 7) to large (the main field within Parcel 2). At the time of the field survey all but one of the fields were being used to grow cereal crops. There are powerlines mounted on timber poles crossing some of the fields.

3.1.18. The following paragraphs describe the main characteristics of the Site and surrounding area following site work.

3.1.19. *Topography/hydrology:* The Site is defined by undulating landform on either side of the A642 which generally falls away to the north and south of the road. The highest part of the Site lies at just below 210 m AOD at the western end of Parcel 1. The lowest part of the Site lies at approximately 125 m AOD at the north-eastern corner of Parcel 2.

3.1.20. There are no watercourses or waterbodies within the Site, though there is a small watercourse just beyond part of the southern boundary of Parcel 5. There are numerous small watercourses within the woodland areas which separate some of the parcels (e.g., Denby Wood to the north of Parcel 7 and Grange Wood to the north of Parcels 1 and 2), and also a number of ponds within Fish Ponds Plantation and The Rookery (to the south-east of Parcel 1).

3.1.21. *Vegetation:* Vegetation within the Site is generally restricted to the arable cropping within the fields, though field boundary hedgerows and hedgerow trees fall within the Site where parcels comprise more than one field. There are also a number of field trees within Parcel 1.

3.1.22. The boundaries to the various parcels are formed by a combination of hedgerows, often with frequent hedgerow trees, tree belts and woodlands, and these combine to provide a strong sense of enclosure to the majority of the Site. Much of the land between the different parcels is also wooded, helping to break up the Site and reduce inter-visibility between the different parcels. The southern and eastern boundaries to Parcel 8 are more open, being formed by post and wire fences, while the boundary between Parcel 3 and the A642 is also open, formed by a post and wire fence and a number of mature trees. The southern boundary to Parcel 2 is also formed by a post and wire fence where it adjoins paddocks within a smallholding.

3.1.23. South of the A642, the eastern and part of the southern boundaries of Parcel 5 are formed by fences, and the hedgerow boundaries to Parcel 6 are more open towards the western end of the parcel, with fewer hedgerow trees. The northern boundary to Parcel 4 where it abuts the A642 is also more open, with mature trees and limited low-level woody vegetation.

3.1.24. As within the Site, field boundaries within the wider surrounding area are formed by a mix of hedgerows with hedgerow trees, drystone walls in varying states of repair, post and wire fences, and woodlands and narrow tree belts. There are often trees surrounding individual and small groups of residential properties, with strong tree cover also present around the National Coal Mining Museum and associated structures and yards.

3.1.25. *Land use:* The whole of the Site is in agricultural use, being predominantly in arable (cereal) cropping at the time of the field survey. The majority of the surrounding landscape is also in agricultural use, being a mix of arable and grassland. Historic industrial activity within the local area is now represented by the National Coal Mining Museum at Caphouse Colliery to the east of the Site, while the New Hall Prison and Young Offenders Institution lies approximately 675 m to the south-east of the Site.

3.1.26. *Scale/enclosure:* The Site forms part of a local landscape pattern comprising variable scale

fields from small through to quite large and typically irregular in shape. The local landscape is well treed and this often results in a strong sense of enclosure, particularly within the Site, but also within the wider landscape. The undulating topography sometimes combines with the strong tree cover to limit inter-visibility in some locations, while also allowing more open, longer-distance views from higher ground where tree cover is more limited in the immediate vicinity of the viewer.

3.1.27. *Settlement/townscape:* The settlement pattern (**Figures 1a** and **1b**) consists of farmsteads and individual properties, and nucleated hamlets and villages, including Thornhill, Thornhill Edge, Middlestown, Overton, Flockton Green, Flockton, Grange Moor and Briestfield. The larger scale settlements of Mirfield, Dewsbury, Ossett, Horbury, Wakefield and Huddersfield lie more distant from the Site.

3.1.28. Building character varies from old-style farmhouses and cottages constructed of stone, to newer red brick or rendered housing. There are also a number of modern larger-scale industrial buildings at Grange Moor, the prison buildings at New Hall, and the historic mining structures at Caphouse Colliery (the National Coal Mining Museum).

3.1.29. A network of main roads (such as the A642 and A637) and narrow, often steep, winding and tree/hedgerow lined rural roads, connects the settlements.

3.1.30. *Visual connections with adjacent landscapes:* Medium and occasionally longer-distance views towards horizons formed by the next ridge of higher ground are often possible from more elevated locations (**Figures 8.10** and **8.13**). But such views can also be suddenly curtailed by even small areas of tree cover close to the viewer. Views out from within the Site are sometimes heavily restricted by woodlands and tree belts immediately adjacent to the Site (**Figures 8.6**, **10.6** and **10.7**).

3.1.31. *Landmarks/built features:* The most obvious landmark in the local area is the Emley Moor transmitting station which lies 2.9 km to the south-west of the Site and is the tallest freestanding structure in the UK at 330 m Above Ground Level (AGL). Other notable built features in the local landscape includes high-voltage overhead power lines on pylons, some of the more prominent blocks of woodland (especially where these break the skyline in views), and the various settlements.

3.1.32. *Perceptual characteristics:* The Site itself has a semi-open character, with some longer-distance panoramic views outwards across the surrounding valleys. Some parts of the

Site are more enclosed due to adjacent tree cover. The wider local landscape shows clear signs of human influence: managed, enclosed farmland; built form and settlements (in places of substantial scale); and infrastructure. These human influences mean that the area does not feel remote, whilst tranquility is reduced by traffic on the A642 and A637. Tranquility mapping undertaken by CPRE[xiv] places the Site and its environs within an area of medium tranquility.

Designated Landscapes

3.1.33. The Site and the immediately surrounding area are not located within any landscape designations, national/statutory or local/non-statutory. The Site does lie within the Green Belt, though as previously noted this is not a landscape designation.

Designated Cultural Heritage

3.1.34. There are no RPGs or other heritage assets within the Site.

3.1.35. Within 1 km of the Site there are a number Listed Buildings in Flockton, together with another at Grange Hall (to the west of the Site), and a number of listed milestones along Wakefield Road – see **Figure 5**. One of these listed milestones is located immediately adjacent to Field 4 of the Proposed Development. There are also Scheduled Monuments at New Hall Farm (approximately 1 km to the east of the Site) and to the north of the National Mining Museum (approximately 250 m to the north-east of the Site).

3.1.36. Potential effects on heritage assets are considered elsewhere in the application documentation and such assets are not therefore considered further in this LVIA.

3.2. Visual Baseline

Visibility of the Site from the Surrounding Area

3.2.1. Preliminary Zone of Theoretical Visibility (ZTV) plans were used during desk study and fieldwork as part of the baseline appraisal. Site work confirmed that the visibility of the Site from the surrounding area was found to be more limited than shown on ZTV plans due to unmapped field-boundary vegetation.

3.2.2. The preliminary bareground ZTV plan (**Figure 6a**) indicates that the Site is visible from some adjacent areas of open farmland within the vicinity of the Site out to approximately:

- 2.5 km from the Site to the north;
- 5 km to the north-east (the north-east side of the Calder Valley);
- 1.5 km to the east;
- 5 km to the south-east;
- 3 km to the south; and
- 1 km to the west.

3.2.3. With woodland taken into account (Forestry Commission National Forestry Inventory data, with woodland assumed to be 15 m in height), as shown on **Figures 6b** and **6c**, these views are further restricted to:

- Narrow bands of land around Upper Denby, Briestfield, Whitley Lower and Thornhill Edge to the north;
- Land within the immediate environs to the Site to the north-east, with a further area of visibility on the north-east side of the Calder Valley on the edge of Ossett;
- Land to the east of the Site, notably on the western and northern edges of Middlestown and Overton;
- Very restricted areas to the south-east of the Site towards Midgley;
- Land immediately to the south of the Site between the A642 and the northern edge of Flockton;
- Areas of higher ground further to the south around Emley and Emley Moor; and
- A band of land between the western part of the Site and Grange Moor.

3.2.4. The field survey generally confirmed the extent of visibility as set out above, but also showed that unmapped vegetation reduces visibility of the Site even further.

Representative Viewpoints

3.2.5. Views to the Site from the surrounding area have been considered using 13 representative viewpoints as shown on **Figures 7a**, **7b** and **7c**. Details of these are provided in **Table 3.1**. Viewpoint photographs are shown on **Figures 8.1** to **8.15**, and **9.1** to **9.15**. Reference should also be made to the Site Photographs at **Figures 10.1** to **10.7**.

Table 3.1: Representative Viewpoints

Viewpoint	Distance/ direction from Site	Description	Potential visual receptors
Viewpoint 1: Grange Lane to south of A642 and Low Farm - adjacent to Parcel 6 424625 415934	Western edge of Parcel 6 Approx. 10 m north of Parcel 5	The viewpoint is located on Grange Lane, a minor road between the A642 and Old Road (which in turn runs between Overton and Flockton Green). Grange Lane runs between Parcels 5 and 6 of the Site. The view is over a bramble hedge on the boundary of Parcel 6, across Parcel 6 itself towards the A642 and Low Farm on the north side of the main road. Some of the buildings and structures within the National Coal Mining Museum are also visible amongst the trees that surround much of the museum site. More distant views are also possible towards the eastern end of Thornhill and Thornhill Edge, with parts of Ossett (including large-scale industrial buildings) also visible on the north-east side of the Calder Valley beyond. The view comprises a mix of more natural landscape elements (farmland and trees/woodland) and built/man-made structures.	Road users
Viewpoint 2: A642 to west of junction with Grange Lane - adjacent to Parcel 3 424377 415903	Adjacent to south-west corner of Parcel 3	This is a roadside viewpoint on the A642 between Wakefield and Huddersfield, close to the junction with Grange Lane. The view is across a grass field which forms part of Parcel 3 across the valley towards the eastern end of Thornhill and Thornhill Edge, with parts of Ossett (including large-scale industrial buildings) also visible on the north-east side of the Calder Valley beyond. The Site is partially contained by strong existing tree cover to the east and west. The distant view is heavily influenced by built form within the various settlements, though farmland and tree cover are also visible.	Road users
Viewpoint 3: Footpath KIR/104/10 on north edge of Flockton Green 424675 415467	Approx. 275 m to south of Parcel 5	The view from this footpath is across arable farmland towards trees alongside Grange Lane and the A642. The view is also partially representative of views obtained from some of the houses on the edge of Flockton Green (to the immediate south and south-west of the viewpoint). Parcel 5 is partially visible from this location, seen beyond the intervening (partial) field boundary hedgerows. Trees lining the A642 restrict views beyond the main road to the north-west and north. To the north-east, views extend towards the eastern end of Thornhill and Thornhill Edge, with parts of Ossett (including large-scale industrial buildings) also visible on the north-east side of the Calder Valley beyond. Short-distance views are predominantly natural in appearance (farmland and trees), though there is modern housing development to the south of the viewpoint.	PROW users Residential occupiers

Viewpoint	Distance/ direction from Site	Description	Potential visual receptors
Viewpoint 4: A642 to east of junction with Footpath KIR/43/10 Kirklees Way 424223 415799	Approx. 90 m to south of Parcel 2 Approx. 120 m north-east of Parcel 4 Approx. 215m west of Parcel 5	This view from the A642 is through a gap between roadside trees to the east and residential properties at a former farmstead known as The Rookery to the west. The view is also partially representative of those obtained from the nearby residential properties. The view is across a number of low buildings which appear to form part of a smallholding. Parcel 2 is just visible beyond the buildings, with further buildings visible in the middle distance at Upper Denby and Woodlands Farm (see *viewpoint 5* below). Long-distance views include built form within Thornhill/Thornhill Edge and Dewsbury (on the far side of the Calder Valley). The view is a mix of built form (both close to the viewpoint and more distant), and farmland and trees.	Road users PROW users Residential occupiers
Viewpoint 5: Bridleway KIR/42/10 close to Upper Denby and junction with Denby Lane 423548 416445	Approx. 300 m to north of Parcel 1 Approx. 380 m to north-west of Parcel 2	This view from the bridleway known as Denby Grange Lane comprises both built form within Upper Denby and the mixed woodland of Grange Wood. The view is also partially representative of views from the various residential properties at Upper Denby. Parts of Parcels 2 and 3 are visible beyond Grange Wood, but the majority of the Site is not visible due to intervening tree cover. The foreground view is mainly residential built form and gardens, while the middle-distance views is mainly woodland and farmland.	PROW users Residential occupiers
Viewpoint 6: Footpath KIR/38/10 between Denby Lane and Kaye Arms public house to west of Parcel 1 422871 416071	Approx. 490 m to west of Parcel 1	This view from a public footpath is across open pasture fields in the foreground towards the woodland to the west and north of Grange Park. Some of the built form around Grange Hall is visible through the intervening trees, and more extensive built form within nearby settlements is visible in the distance to the north and east. Parts of Parcels 2 and 8 are visible above the intervening tree cover, and a very small part of Parcel 1 is visible through the trees on the western edge of the parcel. The rest of the Site is hidden from view by intervening topography and vegetation.	PROW users
Viewpoint 7: Footpath KIR/43/10 (part of Kirklees Way) on western edge of Parcel 2 423991 415997	Western edge of Parcel 2	This view is from a part of the Kirklees Way as it passes along the edge of Parcel 2 between the A642 and Grange Wood. Parcel 2 is clearly visible in the immediate foreground, but the rest of the Site is hidden from view by intervening topography and vegetation. Some longer-distance views are possible towards Thornhill/Thornhill Edge and beyond.	PROW users

Viewpoint	Distance/ direction from Site	Description	Potential visual receptors
Viewpoint 8: BOAT DEN/126/40 (Crawshaw Lane) to south of Six Lanes End and south-west of Flockton 423203 414078	Approx. 1.4 km to south-west of Parcel 4	The view from this BOAT on the northern edge of Emley Moor is towards the settlements of Flockton and Flockton Moor. The A642 runs broadly along the ridge above Flockton, with tree cover along the A642 restricting views beyond. More extensive built form at Ossett, Horbury and Wakefield is visible in the far distance. Parts of Parcel 4 are visible on the upper valley side between Flockton and the A642. Parts of the Site on the north side of the A642 are not visible from this location.	PROW users
Viewpoint 9: Bridleway DEW/8/20 (Back Lane) on north side of Whitley Lower 422019 418162	Approx. 2.4 km to north-west of Parcel 1	The view from this bridleway is past built form on the eastern edge of Whitley Lower and across the two valleys towards the ridge on which the A642 runs. The Emley Moor transmitter is visible on the horizon, and high-voltage powerlines on pylons are also seen crossing the landscape. Parts of Parcels 2 and 3 are visible on the far side of the valley, but the majority of the Site is not visible due to intervening topography and vegetation. The view is also partially representative of views obtained from some nearby residential properties.	PROW users Residential occupiers
Viewpoint 10: Junction of Low Road and Briestfield Road on southern edge of Thornhill Edge 423794 418296	Approx. 1.75 km to north of Parcel 2	This view from the southern edge of Thornhill Edge is across the valley towards the ridge on which the A642 runs. The Emley Moor transmitter is visible on the horizon. The visible landscape is predominantly farmland and woodland, though there are a number of farmsteads and houses also visible. Parts of Parcels 2 and 3 are visible close to the horizon on the far side of the valley, and more restricted views of some of the other parcels on the north side of the A642 are also possible.	Road users Residential occupiers
Viewpoint 11: Wakefield Way at junction of Footpaths KIR/44/20, KIR/44/30 and KIR/205/10 424824 416900	Approx. 400 m to north-east of Parcel 2 Approx. 400 m north of Parcel 8	The view is along a shallow valley with arable and pastoral farmland (with strong boundary vegetation) and woodland. The north-eastern edge of Parcel 2 is visible between Denby Wood to the north-west and Harry Royd Clough Wood to the south-east. The edge of Parcel 8 lies just beyond the horizon to the east of Harry Royd Clough Wood. The view is also partially representative of views obtained from the residential property at Hazle Greave to the north-east of the viewpoint.	PROW users Residential occupiers

Viewpoint	Distance/ direction from Site	Description	Potential visual receptors
Viewpoint 12: Junction of Footpaths Sitlington 21 and 22 with A 642 on western edge of Middlestown and Overton 425616 416818	Approx. 850 m east of Parcel 8	The view is along a shallow valley with arable and pastoral farmland (with strong boundary vegetation) and woodland. A number of farmsteads and residential properties are visible within the rural landscape, and the settlement of Briestfield is visible in the distance on the far side of the valley. Some of the buildings at the National Coal Mining Museum are visible amongst the trees to the south-west, and the main A642 passes immediately to the south of the viewpoint. High-voltage powerlines on pylons also cross the landscape. Parts of Parcels 2, 3 and 8 are visible in the middle distance.	PROW users Road users
Viewpoint 13: Healey Road on south-west edge of South Ossett 427480 419403	Approx. 3.9 km north-east of Parcel 8	The view is across the Calder Valley from the south-west edge of Ossett. The view is a mixed landscape with arable and pastoral farmland, woodland and other tree cover, and built form. The settlements of Thornhill/Thornhill edge and Middlestown are all visible in the view, with industrial development at Healey being the dominant feature in the foreground. The Emley Moor transmitter is visible on the far horizon, and high-voltage power lines on pylons also cross the landscape. Long distance views are possible to parts of Parcels 2, 3 and 8.	Road users Residential occupiers
Viewpoint 14: Bridleway KIR/229/10 Denby Grange Lane close to junction with A642 423288 415656	15 m west of Parcel 1	The view is across an arable field that forms the western part of Parcel 1 towards trees lining the former drive to Denby Grange. The view is also similar to those obtained from the A642 as it passes Parcel 1. Limited more distant views towards Thornhill/Thornhill Edge and beyond are possible through a gap in the trees towards the northern edge of the western part of Parcel 1.	PROW users Road users
Viewpoints 15a and 15b: Junction of Footpath KIR/103/60 (part of the Kirklees Way), Footpath KIR/104/30 and A642 424159 415757	285 m west of Parcel 5 45 m north-east of Parcel 4	The view to the east is across a gently sloping pasture towards Parcel 5, with the edge of the parcel just visible on the far side of the field. Built form within Wakefield is visible in the distance beyond Parcel 5 and the trees lining Grange Lane. The view to the south-west is towards the hedgerow on the western edge of the foreground field, with Parcel 4 lying beyond the hedgerow. Filtered views are possible through the hedgerow.	PROW users

Potential visual receptors

3.2.6. Potential visual receptors are detailed in **Section 5.2**, paragraphs 5.2.5 to 5.2.45 of this report.

4.0 The Proposed Development

4.1. The Solar Farm

4.1.1. Full planning permission is sought for the installation of a renewable energy generating station comprising ground-mounted photovoltaic (PV) solar arrays together with substation, inverter/transformer units, Site access, internal access tracks, security measures, access gates, and other ancillary infrastructure.

4.1.2. The Proposed Development would export renewable energy to the National Grid for a minimum of 40 years.

4.1.3. Details of the proposed solar arrays are provided on the application drawings (see **Appendix 2**). The panels would be ground mounted to a piled sub-structure. At their lower edge the panels would be approximately 1 m from the ground and up to approximately 2.8 m at their higher edge. At horizontal, the panels would be ca. 2.1 m. The inter-row distance would be approximately 3.5 m. The arrays would be of fixed orientation and include bifacial modules made of double glass structures. They have an anti-reflective coating to ensure maximum absorption of solar radiation and reduction of reflections.

4.1.4. Dimensions of other associated structures and buildings are shown on the drawings submitted with the planning application. In summary they include:

- There would be 17 transformer stations distributed across the solar farm. The transformers would be located within metal containers that would be finished in signal white (RAL 9003) and positioned on a hardcore or concrete slab base. Each unit measures ca. 6 m x 2.4 m and with a height of 2.9 m.
- There would also be two substations in Parcel 9 (details as shown in the drawing pack).
- Perimeter fencing (2.1 m-high deer fencing with posts at ca. 6 m intervals) would extend around the perimeter of fields with panels to allow sheep grazing and for security purposes. The fencing will include badger and small mammal scrapes.
- CCTV and infra-red cameras would be mounted every ca. 130 m on perimeter fence posts between 2.5 and 3.0 m tall along the perimeter of the Site.
- There would be no lighting within the Site.

4.1.5. Access to the development once operational would be via the existing farm accesses.

4.2. The Potential Landscape and Visual Effects of the Proposed Development

4.2.1. The construction phase would last for approximately six months and would give rise to short-term landscape and visual effects. The construction phase effects would be distinct to the operational effects as they would include more activity on Site (the operational phase having relatively low activity associated with it). Construction vehicle movement would focus around the main access tracks and compounds. The location of construction works on the Site would change as different areas are built out. Further information is contained elsewhere in the application documentation.

4.2.2. Duration is one of the factors which is taken into consideration in determining the magnitude of landscape and visual effects (**Appendix A1.3**, sub-heading B). The construction-phase landscape and visual effects arising from the Proposed Development would be a secondary consideration to its 40-year long-term operational effects, which are the focus of the assessment contained in **Section 5** of this report. Because of their short-term temporary nature, construction phase effects would not exceed the operational effects in magnitude or significance. The principal effects of the development would relate to the operational phase; construction phase effects are given no further specific consideration in this assessment.

4.2.3. The main features of the operational Proposed Development which could potentially result in landscape and visual effects are:

- Changes to land use and pattern
- New elements such as solar PV panels, transformers, fencing and CCTV cameras
- Access arrangements
- Hard surface areas
- Replacement of arable crops with grazed meadow grassland
- New planting areas.

4.2.4. It is noted that the Proposed Development would typically be 3 m or less in height, although the two sub-stations are 3.5 m high. In the surrounding undulating landscape,

the Proposed Development could be screened by a combination of scrub and/or hedgerows from most near and middle-distance views.

4.3. Landscape Mitigation Measures

4.3.1. Landscape mitigation proposals are incorporated into the scheme design and are illustrated on the Landscape and Ecological Enhancement Plan (LEEP) see **Figure 13**. The landscape mitigation proposals include measures that aim to avoid, reduce, or remedy significant adverse impacts on the landscape and local visual amenity by ensuring that the scheme has a good fit within the landscape setting. It also includes measures that would reduce the visual prominence of the solar arrays in local views by enhancing the condition of key field boundaries on the perimeter of the Site.

4.3.2. Measures have been incorporated into the design of the Site to reduce potential impacts and improve the layout of the Proposed Development, including:

- Maintain and enhance existing boundary hedgerows.
- Retaining and enhancing the amenity of the existing PROWs within and near the Site.
- To screen elements of the Proposed Development from key receptor locations where possible, e.g., nearby residential receptors, PROW users.

4.3.3. The key landscape mitigation measures are as follows:

- Reinforcing and gapping-up existing boundary hedgerows and planting new boundary hedgerows where appropriate. Existing and proposed boundary hedgerows would be managed to a traditional 'A-shape' profile with a height of 2.5 m to reduce the visibility of the Proposed Development.
- Hedgerow trees would be added to new and existing hedgerows where this would be in keeping with the immediately surrounding landscape.
- A new hedgerow would be planted alongside the Kirklees Way as it passes along the western edge of Parcel 2, providing visual separation between the path and the Proposed Development.
- An area of 'open woodland' planting would be provided at the southern end of Parcel 2 in order to provide separation between the Proposed Development and the residential properties to the south. This planting would reduce the visibility of the Proposed Development without completing blocking views across the valley to

the north.

- Proposed species-rich native grassland beneath the proposed solar panels, with management using sheep grazing.
- All new planting would be undertaken using locally native species.

4.3.4. The proposed hedgerow and tree planting and landscape management would produce landscape features to provide effective screening towards the Proposed Development within 10 to 15 years (medium-term). The proposed elements would also enhance the local landscape character.

4.4. Design Alterations Following Planning Submission

4.4.1. After submission of the planning application, feedback on the scheme was received from the KC's landscape officer. A meeting was held with KC on 27th April 2022, which included discussion of amendments to the layout to address the landscape officer's comments and provide additional landscape mitigation as part of the scheme.

4.4.2. In summary, the following amendments have been made to the layout after submission of the planning application (the current layout being version 4.9 from 7th June 2022, see **Appendix 2**), which are relevant to landscape and visual effects:

- Parcel 1 (west): Removal of the southern-most row of panels nearest to Wakefield Road.
- Parcel 1 (east): 10 m wide strip of tree and shrub planting to the north of the existing road-side trees.
- Parcel 2: New hedgerow on the southern boundary of panels with the area of tree and shrub woodland planting to the south; 10 m wide belt of tree and shrub planting at the north-eastern boundary; increased offset of panels from the woodland to the north.
- Parcel 2 / Parcel 3: 10 m wide tree and shrub belt on the central part of the boundary between the two fields to link existing woodlands; wildflower planting underneath the high-voltage power lines.
- Parcel 3: 10 m wide belt of tree and shrub planting on the eastern boundary; 10 m wide belt of tree and shrub planting to the north of existing roadside trees; increased offset of panels from nearby woodland.
- Parcel 4: 3 m wide belt of tree and shrub planting on the northern boundary, offset

to the south of the existing roadside trees; removal of panels from an area to the north of the woodland at Parcel 4, this area being towards the crest of the hill and potentially more exposed to views from Wakefield Road; this area will contain tussocky grassland planting.

- Parcel 5: 15 m wide belt of tree and shrub planting to the east of the area of panels.
- Parcels 7 and 8: increased offset of panels from adjacent woodland.
- Parcel 8: 20 m wide belt of tree and shrub planting at the short eastern boundary towards the mining museum.

4.4.3. The LEEP version B (10th June 2022) reflects these changes to the layout (**Figure 13b**).

4.4.4. The assessment in **Sections 5** and **6** of the report has also been updated to address these changes to the layout.

5.0 Landscape and Visual Effects

5.1. Landscape Effects

Sensitivity of the Site and Surrounding Area

5.1.1. The sensitivity of landscape receptors depends primarily upon the value attached to the landscape and the landscape's susceptibility to the Proposed Development. These aspects of the Site's landscape are dealt with in the following sections.

Landscape Value

5.1.2. The Site and surrounding area do not lie within a designated landscape area. The Site does not contain any NHLE assets. There are, however, a number of NHLE assets located within a 1 km radius of the Site, as noted at **Paragraph 3.1.35** above. For more information on these assets, please refer to the Heritage Assessment (Document R009).

5.1.3. The overall character of the Site and surrounding area is defined by undulating, sometimes elevated, topography, strong tree cover in the form of numerous small woodlands and tree belts, and a range of settlements of varying sizes linked by a network of roads. Long-distance views are possible from some locations, often towards the larger settlements of Huddersfield, Dewsbury and Wakefield, but inter-visibility is more limited elsewhere. There are a number of PROWs within or close to the Site which allow close-up views, and also some residential properties in close proximity to the Site.

Table 5.1: Assessment of Landscape Value (after GLVIA3 Box 5.1 and TGN 02/21)

Factor	Commentary
Natural Heritage	The Site is predominantly managed arable farmland and therefore of limited ecological value. Some of the nearby woodlands are classified as Ancient Replanted (Grange Wood, Hepper Wood and Denby Wood). There are also a number of TPO trees within some of the land parcels. No clearly-identified landscape-related geological interests.
Cultural Heritage	No specific cultural or heritage connections, although the National Coal Mining Museum lies close to the Site at Caphouse Colliery, linking the Site and its environs to the area's long history of industry and in particular energy production.
Landscape Condition	The local landscape is considered to be in generally good condition, though there are some urban-edge influences such as occurrences of fly-tipping.
Associations	No well-known specific associations with notable people, events or the arts.
Distinctiveness	The local landscape is not noted for being distinctive and the Site is not considered to be atypical for the local area.

Factor	Commentary
Recreational	There is a good network of PROWs within the surrounding area, including two locally-promoted trails (the Kirklees Way and the Wakefield Way).
Perceptual – Scenic	The Site and its environs form part of a not unattractive settled agricultural landscape, but are not designated.
Perceptual – Wildness and Tranquillity	The local landscape is not considered to be wild, remote or notably tranquil. Levels of tranquillity are notably reduced in the immediate vicinity of the A642 Wakefield Road.
Functional	The local landscape is part of the Green Belt, but does not provide the setting for any statutory/national or non-statutory/local landscape designations.

5.1.4. Overall, the value of the landscape of the Site and the surrounding area is considered to be **medium**.

Susceptibility to Changes arising from Development of the Type Proposed

5.1.5. The following factors are considered relevant with respect to the susceptibility of the landscape to the Proposed Development:

- The undulating topography and strong tree cover reduce inter-visibility between the Site and much of its environs, allowing the local landscape to accommodate low-level development of the type proposed.
- The existing vegetation pattern provides an appropriate context for further vegetation to be included as part of the Proposed Development.
- High-voltage power lines and steel-lattice pylons cross the landscape in the vicinity of the Site. There are also distant views towards the Emley Moor transmitter to the south-west, and towards extensive settlements associated with the Calder Valley – e.g., Huddersfield, Dewsbury and Wakefield. All these built elements are notable features in the landscape and reduce the susceptibility of the landscape to change arising from the Proposed Development.

5.1.6. On balance the susceptibility of the local landscape to development of the type proposed is judged to be **medium**.

Landscape Sensitivity

5.1.7. The local landscape is considered to be of **medium** value and **medium** susceptibility to development of the type proposed. As previously noted, the KDLCA does not provide a formal assessment of landscape sensitivity for the different LCAs, though a number of *'valued landscape features and attributes'* are noted (see Paragraph 3.1.5). Similarly, the

LCAWD does not provide a formal assessment of landscape sensitivity for the different LCTs within the district.

5.1.8. Overall, this analysis supports the conclusion that the landscape of the Site and the immediate surrounding area has a **medium** sensitivity to the proposed development.

Magnitude of Landscape Effects

5.1.9. The assessment considers scale, extent and duration/reversibility as key aspects of the magnitude of landscape and visual effects. For the proposed development, these considerations are as follows:

- *Scale:* The scale of existing landscape elements that would be lost and the scale of change that would arise from the introduction of new elements is considered to be medium. The various tree belts and woodlands that help to visually break up the different parcels within the Site are particularly important in this respect.
- *Extent:* The extent of the impact of the Proposed Development on landscape character would largely be contained within the Site itself and to parts of the local landscape within a 0.5 km radius of the Site. There would be minor experiential/perceptual effects on the wider setting of the Site.
- *Duration:* The Proposed Development would be operational for a period of 40 years and the duration of effects arising would, therefore, be medium-to-long-term when considering the establishment of mitigation.
- *Reversibility:* The impact of the development could be reversed in the future with removal of the solar PV development from the Site. Landscape mitigation measures instigated as part of the Proposed Development would remain once the proposed solar farm is removed at the end of its life.

Landscape Character Effects

5.1.10. The following **Table 5.2** provides an appraisal of the effects of the proposed development in relation to the different characteristics of the local landscape.

Table 5.2 Appraisal of Effects on Landscape Characteristics

Characteristic	Commentary
Topography/landform	The Proposed Development would have no direct effect on topography or landform. The undulating topography of the local area helps to reduce the visibility of the Proposed Development in views from some locations, but also allows some longer-distance views elsewhere.

Characteristic	Commentary
Vegetation	The Site is well-contained by generally strong vegetation – field boundary hedgerows with hedgerow trees, woodlands and tree belts. This context helps to reduce the visibility of the Proposed Development in many views towards the Site, while also accommodating the considered use of landscape mitigation planting to help integrate the Proposed Development into the wider landscape.
Land use	The Site currently comprises predominantly arable farmland used for cereal production. The Proposed Development would result in a change of land use, with intensively-farmed arable crops being replaced by solar panels (and associated infrastructure) with species-rich grazed pasture below.
Scale/enclosure	The Site is situated within a landscape where fields are typically bounded by hedgerows (often with hedgerow trees), tree belts and woodlands, or drystone walls. Post and wire fences are also present but less common. This creates a landscape of medium scale, though the undulating topography also means that longer-distance views are also possible from some locations, resulting in the perception of a larger-scale landscape. The Proposed Development would not alter the existing field shape or scale within the Site, nor would it include the removal of any notable vegetation. The various woodlands that surround much of the Site would all be retained. Landscape mitigation proposals would strengthen the local field pattern overall, adding hedgerows where there are currently none or only poor-quality ones. Overall, neither the scale of the local landscape nor the levels of enclosure would be notably altered.
Settlement/townscape	No effects would arise on settlement pattern or townscape character. There would potentially be views to the Site from dwellings within the surrounding landscape. Visual effects are addressed in **Section 5.2**.
Visual connections with adjacent landscapes	The Proposed Development would partially reduce the availability of distant panoramic views from PROWs within the Site, but would not generally alter levels of local inter-visibility. This is due to the limited height of the Proposed Development and the undulating topography of the Site and its environs.
Landmarks/built features	Various landmarks and built development are present in the landscape near the Site as described in paragraph 3.1.31. The Proposed Development would not change the contribution of these features to existing local landscape character.
Perceptual characteristics	The character of the undulating local landscape is already strongly influenced by human interventions, from managed (arable) farmland to roads, extensive areas of built form within the surrounding settlements, and the Emley Moor transmitter. There is also an important history of coal mining in the area. The strong levels of tree cover surrounding much of the Site, together with the proposed mitigation planting, mean that in many views there would be only limited visibility of the Proposed Development. Where the undulating topography allows longer-distance views towards the Site, the Proposed Development would generally be seen in the context of other forms of development and would not be perceived as adding human influences to an otherwise wild or remote landscape.

Magnitude of landscape effects

5.1.11. Direct landscape effects would be limited to the Site itself and would involve replacing the prevailing predominantly arable land use with energy infrastructure and sheep grazing. The solar PV panel layout has been designed to retain existing vegetation within and around the outer edges of the Site as far as possible and no notable tree or

hedgerow sections would be removed. As such the overall field scale that is characteristic of the Site would remain.

5.1.12. Proposed landscape mitigation is shown on the LEEP (see **Figure 13**). Approximately 665 m of new hedgerows would be planted[7]. Approximately 3300 m of existing hedgerows would be enhanced. Approximately 2.05 ha of tree and shrub belts would be planted[8]. Approximately 61 new hedgerow trees would be planted. In addition, there would be ca. 63 ha of neutral grassland under the rows of PV panels, and 35 ha of tussocky grassland and wildflowers. The ecological enhancement area (tussocky grassland and pond creation) covers 2.3 ha. The direct effects would occur across only a very small proportion of the host LCA *N1: Emley Moor* (within the *Rolling Wooded Farmland* LCT).

5.1.13. The PV panels would be considerably lower than the tree belts and woodlands that surround much of the Site, including, in the long-term, new areas of woodland planting that are proposed as part of the scheme. The PV panels would be comparable in height to the hedgerows which form some field boundaries in the area, especially once these are enhanced and allowed to grow taller. New hedgerows will also mature to contribute to screening of panels. While the Proposed Development would change the character of the Site itself, the limited visibility from outside the Site would mean that effects on the wider local landscape character would be limited.

5.1.14. At completion of the construction phase, notable landscape effects arising from the Proposed Development would be limited to the Site itself and the immediate setting of the Site up to approximately 0.5 km to the north and east, and 0.75 km to the south and west. Whilst there would be some limited visibility and therefore perceptual influence beyond this, effects would be generally limited and would not alter the overall perception of the local landscape. As the proposed mitigation planting grows and develops, visibility (and therefore perceptual influences) from the surrounding area would reduce.

[7] This figure is slightly lower than as quoted for the planning submission scheme because one road-side hedgerow has been replaced with a tree and shrub belt, which is measured separately.

[8] 1.42 ha at 2 m centres, and 0.63 ha at 1 m centres.

5.1.15. The magnitude of direct landscape effects arising from the Proposed Development would be **large** on completion and in the medium-to-long-term. As the sensitivity of the Site is judged to be **medium**, the significance of the effect would be **major adverse**, where the Proposed Development would change farmland to semi-industrialised renewable energy uses.

5.1.16. Beyond the Site, the magnitude of indirect landscape effects on the surrounding landscape character arising from the Proposed Development would be **small** on completion, reducing to **very small to negligible** in the medium-to-long-term as the mitigation planting matures. Given the **medium** sensitivity of the local landscape character, the significance would be **minor adverse** on completion and **negligible** in the medium-to-long-term.

5.1.17. All direct effects would arise within LCA *N1: Emley Moor* (within the *Rolling Wooded Farmland* LCT). Indirect effects would occur within LCA *N1: Emley Moor*, and also within the *South East Coalfield* and *Calder Valley* LCTs (within Wakefield District). Such indirect effects would occur within limited sections of the LCA/LCTs, with the remaining parts of the LCA/LCTs unaffected.

Green Belt

5.1.18. As previously noted, the Site lies within the Green Belt. Green Belt is a planning designation, rather than a landscape designation. Nevertheless, the openness of the Green Belt does relate to landscape character and is therefore considered here in qualitative terms.

5.1.19. The openness of the landscape that surrounds the Site is already influenced by the strong levels of woodland and other tree cover, much of which is 15 m or more in height, and by the general absence of built form taller than two storeys. The proposed development would not involve the installation or construction of any tall structures or buildings, with the majority of structures within the Proposed Development being less than 3 m tall. Given the generally enclosed nature of the Site, it is therefore considered that the Proposed Development would not result in notable changes to the openness of the local landscape.

5.2. Visual Effects

Zone of Theoretical Visibility

5.2.1. The ZTV of 14 reference points at 3 m above the existing terrain (the maximum height of the solar PV panels) is shown on **Figures 6a** to **c**. The bareground ZTV (**Figure 6a**) is based on OS Terrain 5 data. The screened ZTVs (**Figures 6b** and **6c**) are based on OS Terrain 5 data, with woodland from the Forestry Commission's National Forestry Inventory data (woodland assumed to be 15 m in height). The ZTVs indicate that the main areas of theoretical visibility are:

- Within 1 km of the Site to the north-east and east, including certain properties on the edge of Middlestown and Overton.
- Within 0.5 km to the south and west, including the A642 Wakefield Road, and certain properties on the edge of Flockton and Flockton Green.
- Within two further broadly east-west aligned strips of land to north of the Site – either side of Briestfield, and between Whitley Lower and Thornhill Edge.
- On higher ground to the south of the Site in the vicinity of Emley.

5.2.2. There is also an area of theoretical visibility on the south-west edge of Ossett, approximately 4 km to the north-east of the Site.

5.2.3. Fieldwork undertaken in the landscape surrounding the Site confirms that the visibility of the Site is more limited than as illustrated by the ZTV plans, due to the screening effects of field-boundary vegetation, which includes outgrown and unclipped hedgerows and hedge trees (see **Section 3.2**, paragraph 3.2.2). Such features are not picked up on the screened ZTVs (**Figures 6b** and **6c**), which only take into account the main areas of woodland. While being more informative than the bareground ZTVs, fieldwork has confirmed that the screened ZTV model still exaggerates visibility compared to what is experienced on the ground. Within this undulating and well-treed landscapes, low-level development would be readily absorbed into the landscape, with visibility generally decreasing with increasing distance from the Site.

Viewpoint Assessment

5.2.4. The representative viewpoints are illustrated on **Figures 8.1** to **8.15** and **9.1** to **9.15**. Photomontages have also been provided for *Viewpoints 1, 2, 4* and *11*. They are illustrated on **Figures 11.1** to **11.4**. **Table 5.3** below contains the viewpoint assessment.

Table 5.3: Viewpoint Assessment

Viewpoint	Receptor(s) and sensitivity	Effect
Viewpoint 1: Grange Lane to south of A642 and Low Farm - adjacent to Parcel 6 424625 415934 Western edge of Parcel 6 Approx. 10 m north of Parcel 5	Road users **Medium** sensitivity	Post-construction, road users would have near views of the front of the south-facing panels in Parcel 6, seen approximately 20 m in front of the viewpoint – see **Figure 11.1**. Security fencing and new hedge planting would also be visible in the foreground. The rear faces of the panels in Parcel 5 would also be visible from this location, seen through the roadside vegetation on the south side of Grange Lane. Long-distance views towards Thornhill Edge and Ossett would continue to be available, seen above the solar panels and the existing trees on the far side of Parcel 6 and beyond. In the medium-to-long-term, as the proposed hedgerow reinforcement planting develops, the panels would become less visible in both Parcels 5 and 6. The magnitude of change is assessed as **large**, and with medium sensitivity this would result in a **major-to-moderate adverse** effect on the view. In the medium-to-long-term, the magnitude of change would reduce to **medium**, reducing further to **small** during the summer months when hedgerow vegetation is in full leaf. This would result in a **moderate adverse** effect in winter and a **minor adverse** effect in summer.
Viewpoint 2: A642 to west of junction with Grange Lane - adjacent to Parcel 3 424377 415903 Adjacent to south-west corner of Parcel 3	Road users **Medium to low** sensitivity	Post-construction, road users would have near views of the front of the south-facing panels in Parcel 3, seen approximately 40 m in front of the viewpoint – see **Figure 11.2**. Security fencing and new hedge planting would also be visible in the foreground. Limited long-distance views towards Thornhill Edge and Ossett would continue to be available, seen above the foreground solar panels and through a small gap between the panels and the trees on the western edge of the parcel. In the medium-to-long-term, as the 10 m wide woodland strip to the north of the road-side trees matures, the panels would be screened, particularly in the summer months when proposed hedgerow planting is in full leaf. In winter, there may be glimpsed, but heavily filtered views of the proposed panels. The magnitude of change is assessed as **large**, and with medium sensitivity this would result in a **major-to-moderate adverse** effect on the view. In the medium-to-long-term, the magnitude of change would reduce to **small**, reducing further to **negligible** during the summer months when hedgerow vegetation is in leaf. This would result in a **minor adverse** effect in winter, and a **negligible** effect in summer.
Viewpoint 3: Footpath on north edge of Flockton Green (KIR/104/10) 424675 415467	PROW users Residential occupiers **High** sensitivity	Post-construction, footpath users would continue to have views across arable farmland towards trees lining the A642 and Grange Lane to the north, and towards the eastern end of Thornhill and Thornhill Edge to the north-east, with parts of Ossett (including large-scale industrial buildings) also visible on the north-east side of the Calder Valley beyond. Solar panels and fencing would be visible in Parcel 5 to the north, adjacent to the trees lining the A642 and Grange Lane, and approximately 275 m from the viewpoint. The panels would not form a prominent feature in the view. The trees beyond the solar panels would continue to be visible, and views towards Thornhill and Thornhill Edge would also remain.

Viewpoint	Receptor(s) and sensitivity	Effect
Approx. 275 m to south of Parcel 5		In the medium-to-long-term, the proposed hedgerow planting and enhancement along the southern edge of Parcel 5, which includes proposed hedgerow trees, would provide increasing levels of visual screening between receptors at or near the viewpoint and the proposed solar panels. Views from nearby residential properties on the edge of Flockton Green would be broadly similar to those obtained from the footpath. The magnitude of change is assessed as **medium**, and with **high** sensitivity this would result in a **major-to-moderate adverse** effect on the view. In the medium-to-long-term, the magnitude of change would reduce to **small**, resulting in a **moderate adverse** effect.
Viewpoint 4: A642 to east of junction with Footpath KIR/43/10 Kirklees Way 424223 415799 Approx. 90 m to south of Parcel 2 Approx. 120m north-east of Parcel 4 Approx. 215m west of Parcel 5	Road users **Medium to low** sensitivity PROW users Residential occupiers **High** sensitivity	Post-construction, the view would continue to be dominated by traffic on the A642 and by the foreground buildings associated with the smallholding to the south of Parcel 2. There would be some visibility of solar panels and security fencing in the southern part of Parcel 2, though such views would be filtered by the proposed planting in the section of Parcel 2 adjacent to the smallholding – see **Figure 11.3**. Long-distance views towards Thornhill/Thornhill Edge and Dewsbury (on the far side of the Calder Valley) would remain. Views obtained by road users would generally be glimpsed views only. Views towards the Proposed Development from the residential properties to the west of the viewpoint would generally be at an angle to the main views from these properties, but views of the solar panels would still be possible. In the medium-to-long-term, the proposed hedgerow and woodland planting within the southern part of Parcel 2 would provide increasing levels of visual screening between receptors at or near the viewpoint and the proposed solar panels, particularly in the summer months when deciduous vegetation is in leaf. Long-distance views would also become filtered by the proposed tree planting, though the planting would be undertaken so as to avoid blocking views completely. The magnitude of change is assessed as **small** for road users, and with medium to low sensitivity this would result in a **minor adverse** effect on the view. The magnitude of change is assessed as **small** for PROW users in the vicinity of the main road, and with high sensitivity this would result in a **moderate adverse** effect on the view. Views experienced by PROW users further to the north on the Kirklees Way are considered at *Viewpoint 7* below. The magnitude of change is assessed as **medium** for residential occupiers, and with high sensitivity this would result in a **major-to-moderate adverse** effect on the view from these nearby properties. In the medium-to-long-term, the magnitude of change would reduce to **negligible** for road users and PROW users due to the development and growth of the proposed mitigation planting, reducing further during the summer months when the planting is in leaf. This would result in a **negligible** effect. For residential occupiers, the magnitude of change would reduce to **small** in the medium-to-long-term, resulting in a **moderate adverse** effect.
Viewpoint 5: Bridleway KIR/42/10	PROW users	Views would continue to be dominated by woodland in the valley below Upper Denby – Grange Wood and Hepper Wood.

Viewpoint	Receptor(s) and sensitivity	Effect
close to Upper Denby and junction with Denby Lane 423548 416445 Approx. 300 m to north of Parcel 1 Approx. 380 m to north-west of Parcel 2	Residential occupiers **High** sensitivity	There would be some limited visibility of the backs of the solar panels in the upper parts of Parcels 2 and 3, but these would not form prominent features in the view. The view would not undergo notable further change in the medium-to-long-term. The magnitude of change is assessed as **small**, and with high sensitivity this would result in a **moderate-to-minor adverse** effect.
Viewpoint 6: Footpath KIR/38/10 between Denby Lane and Kaye Arms public house to west of Parcel 1 422871 416071 Approx. 490 m to west of Parcel 1	PROW users **High** sensitivity	The ends of panels would be visible in restricted parts of the Site – parts of Parcels 2, 3 and 8. These would be seen beyond the intervening woodland and trees around Grange Park. There would also be heavily-filtered views towards the ends of panels in the western end of Parcel 1, seen through the trees lining Bridleway KIR/42/10 on Denby Grange Lane. Long-distance views to the east would remain and the overall composition of the view would remain the same. In the medium-to-long-term, proposed hedgerow planting and enhancement along the western edge of Parcel 1 would reduce the visibility of panels in this part of the Site. The visibility of panels in the other parcels would not change. The magnitude of change is assessed as **small**, and with high sensitivity this would result in a **moderate-to-minor adverse** effect.
Viewpoint 7: Footpath KIR/43/10 (part of Kirklees Way) on western edge of Parcel 2 423991 415997 Western edge of Parcel 2	PROW users **High** sensitivity	The ends of solar panels in Parcel 2 would be clearly visible and prominent from this section of the Kirklees Way, with panels being located just beyond the proposed new native hedgerow and security fence. Longer-distance views towards Thornhill and Thornhill Edge would be partially blocked by the proposed solar panels. In the medium-to-long-term, the proposed hedgerow adjacent to the footpath would start to filter views towards the foreground solar panels, and by 10 to 15 years after planting there would be only limited visibility of the panels, even in the winter months when deciduous vegetation is not in leaf. The magnitude of change is assessed as **very large**, and with high sensitivity this would result in a **major adverse** effect for this section of the Kirklees Way. In the medium-to-long-term as the proposed hedgerow planting develops and grows, the magnitude of change would reduce to **small**, resulting in a **major-to-moderate adverse** effect for this section of the Kirklees Way.
Viewpoint 8: BOAT DEN/126/40 (Crawshaw Lane) to south of Six Lanes	PROW users **High** sensitivity	The front faces of solar panels in much of Parcel 4 would be visible, seen above and to the north of the Flockton playing fields in the middle distance. The overall composition of the view would not be notably altered. While perceptible from this viewpoint, the amendment of the scheme to remove panels from the area to the north of the woodland on field 4 would only make a very minor change to the view compared to the submitted scheme.

Viewpoint	Receptor(s) and sensitivity	Effect
End and south-west of Flockton 423203 414078 Approx. 1.4 km to south-west of Parcel 4		The visibility of the panels from this location would not alter notably in the medium-to-long-term, though the proposed hedgerow enhancement along the southern edge of Parcel 4 would help to reduce the visibility of the panels from the playing fields and nearby houses. The magnitude of change is assessed as **small**, and with high sensitivity this would result in a **moderate adverse** effect on the view.
Viewpoint 9: Bridleway DEW/8/20 (Back Lane) on north side of Whitley Lower 422019 418162 Approx. 2.4km to north-west of Parcel 1	PROW users Residential occupiers **High** sensitivity	The rear faces of panels in restricted parts of Parcels 2 and 3 would be visible in the distance, but with most of the Proposed Development hidden from view by the woodland and tree cover which surrounds much of the Site. Due to the intervening topography, where visible, the panels would be seen in the context of built form within Whitley Lower. The panels would form a thin line of man-made structures near, but not breaking, the horizon, and would not form a notable or prominent feature in the view. The visibility of the panels from this location would not alter notably over time. The magnitude of change is assessed as **small-to-negligible**, and with high sensitivity this would result in a **minor adverse** effect on the view.
Viewpoint 10: Junction of Low Road and Briestfield Road on southern edge of Thornhill Edge 423794 418296 Approx. 1.75 km to north of Parcel 2	Road users **Medium** sensitivity Residential occupiers **High** sensitivity	The rear faces of panels in restricted parts of Parcels 2, 3 and 8 would be visible in the distance, but with most of the Proposed Development hidden from view by the woodland and tree cover which surrounds much of the Site. The panels would form a thin line of man-made structures near, but not breaking, the horizon, and not forming a notable or prominent feature in the view. The visibility of the panels from this location would not alter notably over time. The magnitude of change is assessed as **small**, and with high sensitivity this would result in a **moderate adverse** effect on the view for nearby residential occupiers. For road users with medium sensitivity, there would be a **minor adverse** effect.
Viewpoint 11: Wakefield Way at junction of Footpaths KIR/44/20, KIR/44/30 and KIR/205/10 424824 416900 Approx. 400 m to north-	PROW users Residential occupiers **High** sensitivity	The rear faces of panels at the north-east end of Parcel 2 would be just visible beyond the hedgerow on this boundary of the Site – see **Figure 11.4**. There may also be some very limited visibility of the rear faces of panels at the northern edge of Parcel 8. In the medium-to-long-term, the proposed 10 m wide strip of woodland planting inside the field boundary trees on Parcel 2 and reinforcement of hedgerows along the boundaries of Parcels 2 and 8 (gapping up of hedgerows and planting of hedgerow trees) would provide increasing filtering of these views, such that the solar panels would become increasingly imperceptible in the view. The magnitude of change is therefore assessed as **small**, reducing to **negligible** in the medium-to-long-term. For high sensitivity residential

Viewpoint	Receptor(s) and sensitivity	Effect
east of Parcel 2 Approx. 400 m north of Parcel 8		receptors, this would result in a **moderate adverse** effect, reducing to **minor adverse** over time.
Viewpoint 12: Junction of Footpaths Sitlington 21 and 22 with A 642 on western edge of Middlestown and Overton 425616 416818 Approx. 850 m east of Parcel 8	PROW users **High** sensitivity Road users **Medium** sensitivity	The ends and rear faces of panels would be visible in restricted parts of Parcels 1, 2 and 3 from this location, seen in the middle distance. The majority of the Proposed Development would be hidden from view by intervening topography and vegetation. The panels would form a thin line of man-made structures extending over the horizon, but would not alter the overall form of the horizon or create stark intrusions into the skyline. The panels would not form a notable or prominent feature in the view. The visibility of the panels from this location would not alter notably over time. The magnitude of change is assessed as **small**, and with high sensitivity this would result in a **moderate adverse** effect on the view for PROW users. For road users with medium sensitivity, there would be a **minor adverse** effect.
Viewpoint 13: Healey Road on south-west edge of South Ossett 427480 419403 Approx. 3.9 km north-east of Parcel 8	Road users **Medium** sensitivity Residential occupiers **High** sensitivity	The rear faces of panels would be visible in restricted parts of Parcels 1, 2 and 3 from this location, seen at a distance of nearly 4 km. There may also be some very limited visibility of panels in Parcels 5 and 6. Much of the Proposed Development would be hidden from view by intervening topography and tree cover. The panels would form narrow strips of man-made structures, seen against a backdrop of trees and woodland on the horizon. The panels would not extend above the horizon in this view, and the overall composition of the view would not change, with industrial development in the foreground tending to draw the eye of receptors. The visibility of the panels from this location would not alter notably over time. The magnitude of change is assessed as **small-to-negligible**, and with high sensitivity this would result in a **minor adverse** effect on the view for nearby residential occupiers. For road users with medium sensitivity, there would be a **minor adverse** effect.
Viewpoint 14: Bridleway KIR/229/10 Denby Grange Lane close to junction with A642 423288 415656 15 m west of Parcel 1	PROW users **High** sensitivity Road users **Medium-to-low** sensitivity	Post-construction, the panels in Parcel 1 would be clearly visible from Denby Grange Lane, and also from much the A642 as it passes to the south of Parcel 1. Security fencing and the proposed new native hedgerow would also be clearly visible beyond the drystone wall. In the medium-to-long-term, as the proposed hedgerow planting develops, the panels would become less visible, particularly in the summer months when proposed hedgerow planting is in full leaf. The magnitude of change is assessed as **large**, resulting in a **major adverse** effect for high sensitivity PROW users. For medium-to-low sensitivity road users, this would result in a **moderate adverse** effect on the view.

Viewpoint	Receptor(s) and sensitivity	Effect
		In the medium-to-long-term, the magnitude of change would reduce to **medium**, reducing further to **small** during the summer months when hedgerow vegetation is in leaf. For PROW users with high sensitivity, this would result in a **major-to-moderate adverse** effect in the winter months, and a **moderate adverse** effect in the summer months. For road users this would result in a **moderate adverse** effect in winter, and a **minor adverse** effect in summer.
Viewpoints 15a and 15b: Junction of Footpath KIR/103/60 (part of the Kirklees Way), Footpath KIR/104/30 and A642 424159 415757 285 m west of Parcel 5 45 m north-east of Parcel 4	PROW users **High** sensitivity	Post-construction there would be some visibility of the ends of the panels in Parcel 5 to the east of the viewpoint, seen beyond the existing hedgerow on the far side of the foreground field. There may be increased visibility of these panels from further south on the Kirklees Way, though views would continue to be partially filtered by the intervening hedgerow. The ends of solar panels in Parcel 4 to the south-west would also be partially visible, seen beyond the intervening hedgerow. In the medium-to-long-term, the increased height of the hedgerows and the proposed hedgerow trees on the west side of Parcel 5 and the east side of Parcel 4 would reduce the visibility of the panels in both of these parcels, particularly in the summer months when deciduous vegetation is in full leaf. Post-construction the magnitude of change relating to Parcel 5 to the east is assessed as **medium**, while that relating to Parcel 4 (to the south-west) would be **large**. In the medium-to-long-term, the magnitude of change would reduce to **small** (Parcel 5) and **medium** (Parcel 4). With high sensitivity, post-construction the scale of effect would be **major-to-moderate** for views to the east (Parcel 5) or **major adverse** for views to the south-west (Parcel 4). In the medium-to-long-term, the scale of effect would reduce to **moderate adverse** (Parcel 5) and **major-to-moderate adverse** (Parcel 4). Effects would tend to be less noticeable during the summer months when deciduous vegetation is in full leaf.

Effects on Visual Receptor Groups

5.2.5. In this section of the report, principal effects on the following visual receptors are considered:

- Local residents of nearby settlement (see note in **Appendix A1.4**).
- Users of nearby roads.
- Users of PROWs.

Settlement

5.2.6. This assessment gives an overview of visual effects on the clusters of properties and settlement as a whole based on desk study and fieldwork in public areas. This is not a residential amenity assessment; refer to **Appendix 1**, **Section A1.4** for further details on

scope and methodology.

5.2.7. Residents within settlements are assessed to be of **high** sensitivity. It is assumed that residents would have a moderately high interest in the landscape surrounding properties within the settlement.

Thornhill and Thornhill Edge

5.2.8. There would potentially be views from a number of properties on the southern edge of Thornhill and Thornhill Edge – see *Viewpoint 10*. Occupiers of residential properties in these areas would have views of the rear faces of panels in parts of Parcels 2 and 3 (minimum distance of ca. 1.5 km from receptors) seen across the valley and against a backdrop of tree cover along the A642. The panels would form a thin line of man-made structures near, but not breaking, the horizon, and not forming a notable or prominent feature in the view.

5.2.9. Effects on completion would be **small** in magnitude and **moderate adverse** in significance. There would not be a notable change to these views in the medium-to-long-term.

Ossett and the Calder Valley

5.2.10. There would be potential visibility from a group of residential properties on the south-west edge of Ossett, on the north-east side of the Calder Valley – see *Viewpoint 13*. Views from these properties are across the Calder Valley towards the Emley transmitter, though the orientation of many of these properties is such that this is not their main direction of view. The view is a mix of industrial development in the bottom of the valley, with farmland and woodland beyond.

5.2.11. Where visible, the panels would form narrow strips of man-made structures, seen against a backdrop of trees and woodland on the horizon. The panels would not extend above the horizon in such views, would not form notable features in the view, and the overall composition of the view would not change, with industrial development in the foreground tending to draw the eye of receptors.

5.2.12. Effects on completion would be **small-to-negligible** in magnitude and **minor adverse** in significance. The proposed mitigation planting would not result in further notable changes to the visibility of the Proposed Development in the medium-to-long-term.

Overton and Middlestown

5.2.13. Properties on the western edge of Overton and Middlestown would potentially have some limited visibility of the eastern edge of the Proposed Development – see *Viewpoint 12*. From some of these properties, the ends and rear faces of panels may be visible in restricted parts of Parcels 2, 3 and 4, seen in the middle distance. The majority of the Proposed Development would be hidden from view by intervening topography and vegetation.

5.2.14. The panels would form a thin line of man-made structures extending over the horizon, but would not alter the overall form of the horizon or create stark intrusions into the skyline. The panels would not form a notable or prominent feature in the view.

5.2.15. Effects on completion would be **small** in magnitude and **moderate adverse** in significance. The proposed mitigation planting would not result in further notable changes to the visibility of the Proposed Development in the medium-to-long-term.

Flockton and Flockton Green

5.2.16. Properties on the northern edge of Flockton and Flockton Green would potentially have visibility of the proposed solar panels in Parcels 4 and 5 – see *Viewpoint 3*. Solar panels and fencing would be seen adjacent to the trees lining the A642 and Grange Lane. The panels would not form a prominent feature in the view. The trees beyond the solar panels would continue to be visible and views towards Thornhill and Thornhill Edge would also remain.

5.2.17. In the medium-to-long-term, the proposed hedgerow planting and enhancement along the southern edge of Parcel 5 would provide increasing levels of visual screening between residential receptors and the proposed solar panels.

5.2.18. Effects on completion would be **medium** in magnitude and **major-to-moderate adverse** in significance. In the medium-to-long-term, effects would be **small** in magnitude and **moderate adverse** in significance.

Emley

5.2.19. Properties on the northern edge of Emley would potentially have visibility of the proposed solar panels in Parcel 4, between the A642 and Flockton/Flockton Green. Panels would be seen as man-made structures close to, but not breaking, the horizon, with trees and woodland to either side and behind. The overall composition of the view

would not be altered.

5.2.20. Effects on completion would be **small** in magnitude and **moderate adverse** in significance. There would not be a notable change to these views in the medium-to-long-term.

Grange Moor

5.2.21. The ZTVs indicate and the field survey has confirmed that there is very unlikely to be any visibility from residential properties in Grange Moor.

Whitley Lower

5.2.22. Some properties on the southern edge of Whitley Lower would potentially have visibility of the proposed solar panels in parts of Parcels 2 and 3 – see *Viewpoint 9*. Views would be towards the rear faces of the panels, and the majority of the Proposed Development would not be visible due to intervening topography and vegetation which surrounds much of the Site. The panels would form a thin line of man-made structures near, but not breaking, the horizon, and would not form a notable or prominent feature in the view.

5.2.23. Effects on completion would be **small-to-negligible** in magnitude and **minor adverse** in significance. The proposed mitigation planting would not result in further notable changes to the visibility of the Proposed Development in the medium-to-long-term.

Briestfield

5.2.24. Certain properties on the southern side of Briestfield would potentially have visibility of the proposed solar panels in parts of Parcel 2. Views would be towards the rear faces of the panels, and the majority of the Proposed Development would not be visible due to intervening topography and vegetation which surrounds much of the Site. The panels would form a thin line of man-made structures near, but not breaking, the horizon, and would not form a notable or prominent feature in the view.

5.2.25. Effects on completion would be **small** in magnitude and **moderate adverse** in significance. The proposed mitigation planting would not result in further notable changes to the visibility of the Proposed Development in the medium-to-long-term.

Upper Denby and Denby Grange

5.2.26. Views from properties in the hamlet of Upper Denby are dominated by the woodland in the valley below – see *Viewpoint 5*. There would be some limited visibility of the

backs of the solar panels in the upper parts of Parcels 2 and 3, but these would not form prominent features in the view.

5.2.27. Some of the properties at Denby Grange would potentially have filtered views of the solar panels in Parcel 1, with views predominantly filtered by the intervening field boundary vegetation.

5.2.28. Effects on completion would be **small** in magnitude and **moderate adverse** in significance. There would not be a notable change to these views in the medium-to-long-term.

The Rookery (on A642)

5.2.29. Some of the properties at the converted farm on the A642 known as The Rookery would have views towards either Parcel 2 (to the north) or Parcel 4 (to the south) – see *Viewpoint 4* and *Site Photo B* respectively.

5.2.30. Views towards Parcel 2 would be towards the front of the panels and the security fencing, but would be at an angle to the main direction of view from these properties. Views would be partially filtered by the proposed tree planting in the southern part of the parcel. In the medium-to-long-term, the proposed hedgerow and tree planting would provide increasing levels of visual screening between residential occupiers and the proposed solar panels, particularly in the summer months when deciduous vegetation is in leaf. Layout version 4.9 includes a larger area of woodland planting at the southern end of Parcel 2 and also slightly increased offset of panels from the western edge of the parcel. While these measures would be an improvement for nearby residents, they would not lead to a reduction in the assessed magnitude of visual effect.

5.2.31. Views towards Parcel 4 would be across the A642 towards the rear of the panels and the security fencing. Again, in the medium-to-long-term, the proposed roadside hedgerow planting and enhancement would provide increasing levels of visual screening between residential occupiers and the proposed solar panels, particularly in the summer months when deciduous vegetation is in leaf. Note that layout 4.9 includes a 10 m wide strip of tree and shrub planting to the south of the existing roadside trees. This would reduce visual effects in the long-term compared to the originally submitted scheme (layout version 3.5).

5.2.32. For these residential receptors, effects on completion would be **medium** in magnitude

and **major-to-moderate adverse** in significance. Effects in the medium-to-long-term would reduce to **small** in magnitude and **moderate-to-minor adverse** in significance.

Low Farm

5.2.33. Residential properties at Low Farm are all occupied by the landowner for the Site or his family and are therefore not considered to be sensitive receptors in relation to the Proposed Development.

Roads

5.2.34. The nearest roads to the Site are the A642 Wakefield Road which runs east-west through the middle of the Site, and Grange Lane which runs between Parcels 5 and 6, joining the A642 close to the south-west corner of Parcel 3 – see *Viewpoints 1, 2* and *4*, and *Site Photos B* and *C*. Upon completion there would be views of the proposed solar panels and associated infrastructure in Parcels 1, 2, 3, 4 and 6 from parts of the A642 where it passes alongside the Site, and views of Parcels 3, 5 and 6 from a short section of Grange Lane.

5.2.35. Note that, for much of a journey along the A642 near the Site, views into the adjacent fields, including those proposed for the solar PV development, are screened or heavily filtered by roadside vegetation, which includes woodland strips, mature trees and hedgerows (see aerial photograph **Figure 1d**, *Site Photos B* and *C*, and *Viewpoints 2* and *4*). There are no sustained views over the whole or any substantial proportion of the Site. Views are of near parts of individual Parcels only and are broken up with significant stretches of journey when there are no views of the Site.

5.2.36. In the medium-to-long-term, the proposed hedgerow planting and enhancement alongside these roads would provide increasing levels of visual screening between road users and the proposed solar panels, particularly in the summer months when deciduous vegetation is in leaf.

5.2.37. Layout version 4.9 (**Appendix 2**) includes various measures which will reduce long-term effects for users of this road (see **Section 4.4**). Most importantly, 10 m wide strips of tree and shrub planting are proposed inside fields and off-set from existing mature road-side trees. In relation to Wakefield Road, these belts of vegetation are located at the southern end of Parcel 1 (eastern part), the northern end of Parcel 4, and the southern end of Parcel 3. There is also a thicker strip of woodland at the southern end

of Parcel 2, although from the main road, as is the case for other stretches of the route, there would only be transient, glimpsed views of this part of the site (Viewpoint 4).

5.2.38. For main road users on the A642 as it passes through the Site, effects on completion would be **medium to large** in magnitude depending on the exact location on the route. For medium to low sensitivity road users, overall effects would be **moderate adverse** in significance.

5.2.39. In the medium-to-long-term, effects for users of the A642 would reduce to **medium to small** in magnitude during the winter and **small** in magnitude during the summer when deciduous vegetation is in leaf. For medium to low sensitivity main road users, effects would be up to **minor adverse** in significance. The amendments to the Proposed Development at layout version 4.9 have resulted in a reduction in the medium-to-long-term effect.

5.2.40. For users of Grange Lane between Parcels 5 and 6, effects on completion would be **large** in magnitude. For these medium sensitivity receptors, effects would be **major-to-moderate adverse** in significance.

5.2.41. In the medium-to-long-term, effects for users of Grange Lane would reduce to **medium to small** in magnitude during the winter and **small** in magnitude during the summer when deciduous vegetation is in leaf. Effects would be **moderate-to-minor adverse** in significance.

5.2.42. There would also potentially be visibility from certain sections of a number of other minor roads within the surrounding area, notably those in the vicinity of Upper Denby, Briestfield, Whitley Lower, Thornhill Edge, Middlestown/Overton, Flockton/Flockton Green, and Emley – see *Viewpoints 5, 6, 9* and *10*. There would also be more distant views from some roads on the south-west edge of Ossett – see *Viewpoint 13*.

5.2.43. For locations on these roads where there is potential visibility, views are often glimpsed-only, would generally be of only restricted parts of the Site, and the solar panels would not form a prominent component in the view. Effects on completion would typically be **small-to-negligible** in magnitude and **minor adverse to negligible** in significance. The proposed mitigation planting would typically not result in further notable changes to the visibility of the Proposed Development in the medium-to-long-term.

Public Rights of Way

5.2.44. The sensitivity of users of rural PROWs near the Proposed Development would be **high** as appreciation of the surrounding countryside is likely to be an important component of users' enjoyment of the route. The study area does not contain any specific viewpoints noted on OS mapping, but there are two locally-promoted routes – the Kirklees Way and the Wakefield Way, with the former passing along the western edge of Parcel 2.

5.2.45. PROWs are shown on **Figures 4a**, **4b** and **4c**, and effects on users of PROWs close to the Site are summarized in **Table 5.4**.

Table 5.4: Visual Effects on PROW Users

PROW	**Effect**
Footpath KIR/43/10 (part of the Kirklees Way) *Western edge of Parcel 2*	The route runs from the A642 adjacent to the properties at The Rookery, north along the edge of Parcel 2, and then drops down through Grange Wood and Denby Wood before rising up again towards Upper Denby and Denby Lane. *Viewpoint 7* lies on this route, part-way down the western edge of Parcel 2, and views would be broadly similar for most of the route alongside Parcel 2. The current view is across an arable field which rises slightly to the east, preventing views beyond. Further north along the path views open up towards Thornhill and Thornhill edge. The ends of solar panels in Parcel 2 would be clearly visible and prominent from this section of the Kirklees Way, with panels being located just beyond the proposed new native hedgerow and security fence. Longer-distance views towards Thornhill and Thornhill Edge would be partially blocked by the proposed solar panels. In the medium-to-long-term, the proposed hedgerow adjacent to the footpath would start to filter views towards the foreground solar panels, and by 10 years after planting there would be only limited visibility of the panels, even in the winter months when deciduous vegetation is not in leaf. The effect on completion is assessed as **very large** in magnitude, and for high sensitivity receptors the significance of effect would be **major adverse** for this section of the Kirklees Way. In the medium-to-long-term as the proposed hedgerow planting develops and grows, the magnitude of change would reduce to **small**, resulting in a **major-to-moderate adverse** significance of effect for this section of the Kirklees Way.
Footpaths KIR/103/40 & KIR/104/10 *From Grange Lane south along western edge of Parcel 5 Flockton Green, though mapping shows the 103/40 turning south-west part-way along*	The route leaves Grange Lane close to its junction with the A642, heading south along the edge of Parcel 5. Both OS mapping and PROW mapping on the KC website show this route as turning to the south-west from part-way along the Parcel 5 boundary to cross the field to the west, but evidence on the ground suggests that most users continue to travel along the edge of the field until the path joins with KIR/104/10 at the southern corner of Parcel 5. S*ite Photo A* lies on this route at the southern corner of Parcel 5, and *Viewpoint 3* lies further south on the route, close to the edge of Flockton Green.

PROW	Effect
Parcel 5 western boundary	The existing view is across arable farmland within Parcel 5 and adjoining fields towards trees lining Grange Lane and the A642. Longer-distance views beyond the trees are also possible. Post-construction, footpath users at the edge of Parcel 5 would have clear views of the ends of the adjacent solar panels. Further to the south and Flockton Green, footpath users would continue to have views across arable farmland towards trees lining the A642 and Grange Lane to the north, and towards the eastern end of Thornhill and Thornhill Edge to the north-east, with parts of Ossett (including large-scale industrial buildings) also visible on the north-east side of the Calder Valley beyond. Solar panels and fencing would continue to be visible in Parcel 5 to the north, adjacent to the trees lining the A642 and Grange Lane. The panels would no longer form a prominent feature in the view. The trees beyond the solar panels would continue to be visible, and views towards Thornhill and Thornhill Edge would also remain. In the medium-to-long-term, the proposed hedgerow planting and enhancement along the southern edge of Parcel 5 would provide increasing levels of visual screening for footpath users to the south of Parcel 5, but clear views of the ends of the panels would continue where the path is adjacent to the Site. The effect is assessed as **very large to medium** in magnitude, and with high sensitivity the significance of effect would be **major adverse**. In the medium-to-long-term, the magnitude of change would reduce to **very large to small** at different points on the footpath, resulting in a **major-to-moderate adverse** significance of effect.
Various footpaths crossing the field known as The Rough between Parcels 4 and 5, including: KIR/104/30 KIR/104/20 KIR/103/20 KIR/103/10 KIR/103/50 (part of the Kirklees Way) KIR/103/60 (part of the Kirklees Way)	There are a number of paths crossing the field between Parcels 4 and 5 – see *Viewpoints 15a and 15b*. Existing views from these paths are broadly similar to those obtained from KIR/103/40 – views across arable farmland with small woodlands and tree belts, and some longer-distance views possible, particularly to the east. Houses on the edge of Flockton Green are also visible. Post-construction, security fencing and the ends of the solar panels in Parcel 5 would be visible to the east, and filtered views of those in the northern part of Parcel 4 would also be possible, particularly from Footpath KIR/103/50, seen through the hedge along the eastern edge of the parcel. Amendments made to the layout (version 4.9) include removing an area of solar panels from the eastern side of Parcel 4. This would reduce effects for users of stretches of path where there are views to Parcel 4. The effect post-completion is assessed as up to **large** in magnitude depending on the location of the receptor. For high sensitivity path users, the significance of effect would be up to **major adverse**. In the medium-to-long-term, the increased height of the existing hedgerows and the proposed tree planting along the eastern boundary of Parcel 4 and the western boundary of Parcel 5 would help to reduce the visibility of the proposed solar panels. The effect would reduce to **small to large** in magnitude, depending on the location of the receptor, resulting in a **moderate** to **major-to-moderate adverse** significance of effect.
Bridleways KIR/229/20 + KIR/229/10 + KIR/42/10 Denby Grange Lane *Adjacent to Parcel 1*	Users of the southern part of Denby Grange Lane bridleway currently have views east across Grange Park – two fields are currently being used for arable (cereal) production – see *Viewpoint 14*. These views are then curtailed by woodland around Denby Grange Lodge approximately 150 m north of the A642. The views to the east do not open up again until bridleway users reach Upper Denby, though more open views are possible to the west all along this route. *Viewpoint 5* shows the view from the bridleway at Upper Denby, while *Site Photo C* shows the view from the A642 adjacent to Parcel 1 which is similar to the view from the southern part of the bridleway.

PROW	Effect
	Post-completion, the ends of solar panels and perimeter fencing in the western field of Parcel 1 would be visible from the southern 150 m of the bridleway, seen beyond the drystone wall that bounds the field. Travelling north, for the majority of the bridleway the Proposed Development would not be visible due to intervening trees and other vegetation. As the route approaches Upper Denby, limited views are again possible towards the rear faces of the panels in Parcels 2 and 3. In the medium-to-long-term, the proposed new native hedgerow on the field side of the drystone wall would filter views towards the panels from the southern section of the bridleway. The effect post-completion for users of the bridleway would range from **large** in magnitude on the southern section, to **small** in magnitude at Upper Denby, with no visibility for much of the length of the bridleway. This would result in effects ranging from **major adverse** down to **no discernible effect** in significance. For the route as a whole there would be limited visibility, resulting in an effect of at worst **medium to small** magnitude and **moderate adverse** significance. In the medium-to-long-term as the proposed hedgerow planting alongside the southern part of the route develops, the effect would reduce to **medium** in magnitude for this section of the bridleway, and **small to negligible** in magnitude for the bridleway as a whole. This would result in an effect of at worst **minor-to-moderate adverse** significance for the route as a whole.
Footpath KIR/38/10 *West of Parcel 1*	This footpath runs from Denby Lane between Upper Denby and Grange Moor, south to the Kaye Arms public house on the A642. *Viewpoint 6* shows the view from part-way along this route. The ends of panels would be visible in restricted parts of the Site – parts of Parcels 2, 3 and 8. These would be seen beyond the intervening woodland and trees around Grange Park. There would also be heavily-filtered views towards the ends of panels in the western end of Parcel 1, seen through the trees lining Bridleway KIR/42/10. Long-distance views to the east would remain and the overall composition of the view would remain the same. In the medium-to-long-term, proposed hedgerow planting and enhancement along the western edge of Parcel 1 would reduce the visibility of panels in this part of the Site. The visibility of panels in the other parcels would not change. Post-completion effects would be **small** in magnitude, and with high sensitivity this would result in a **moderate-to-minor adverse** significance of effect.
Footpaths KIR/44/20 KIR/44/30 KIR/205/10 (part of Wakefield Way) Sitlington footpaths 21 & 22 *North-east of Site*	The view is along a shallow valley with arable and pastoral farmland (with strong boundary vegetation) and woodland. The north-eastern edge of Parcel 2 is visible between Denby Wood to the north-west and Harry Royd Clough Wood to the south-east. The edge of Parcel 8 lies just beyond the horizon to the east of Harry Royd Clough Wood. *Viewpoint 11* shows the view from the junction of these routes. The rear faces of panels at the north-east end of Parcel 2 would be just visible beyond the hedgerow on this boundary of the Site – see **Figure 11.4**. There may also be some very limited visibility of the rear faces of panels at the northern edge of Parcel 8. In the medium-to-long-term, the proposed hedgerow enhancement and reinforcement along these boundaries of Parcels 2 and 8 would provide increasing filtering of these views, such that the solar panels would become increasingly imperceptible in the view.

PROW	Effect
	Post-completion effects are assessed as being **small** in magnitude, reducing to **negligible** in magnitude in the medium-to-long-term. With high sensitivity, this would result in a **moderate adverse** significance of effect, reducing to **minor adverse** over time.
Footpath KIR/107/10 *West of Parcel 4*	This footpath offers views eastwards from a slightly elevated position in a pasture to the south of Wakefield Road. The foreground contains a motorcycle track, beyond which is another pasture and the gently rising ground of Parcel 4. The motorcycle track and field boundaries contain mature oak trees, which screen much of Parcel 4 from view. Rising ground lies in the far distance beyond the intermediate horizon formed by the eastern edge of Parcel 4. Rows of PV panels in Parcel 4 would be seen end-on, occupying the middle-distance of the view. The removal of an area of panels from the eastern side of Parcel 4 (layout version 4.9) would be perceptible in this viewpoint. For high sensitivity path users, the effect on completion would be **small** magnitude and **moderate adverse** significance. In the medium-to-long-term, as the hedgerow on the western side of Parcel 4 matures, the magnitude of effect would reduce to **small to negligible** and the significance of the visual effect would be **minor adverse**.

5.2.46. The ZTVs indicate, and the field survey has shown, that there would also be some limited visibility of the Proposed Development from a number of other more distant PROWs within the surrounding countryside, both to the north and south of the Site – see *Viewpoints 8* and *9*. Such views are likely to be glimpsed views only, seen through gaps in intervening vegetation, and at some distance from the Site. Effects on users of these routes are therefore likely to be limited, and no greater than **moderate adverse** in significance.

5.2.47. There would also be visibility of the Proposed Development in Parcel 4 from the Flockton cricket ground to the south as the vegetated boundary between Parcel 4 and the cricket ground has some gaps in it. The cricket ground does not appear to have formal public access however and could not therefore be formally assessed as part of this LVIA.

6.0 Summary and Conclusions

6.1. Baseline

6.1.1. Landscape Visual Limited was appointed to prepare an LVIA for a solar PV scheme on land at Low Farm, Wakefield Road, Grange Moor ('the Site').

6.1.2. This LVIA report has been updated to address changes to the layout since planning submission was made and assesses layout version 4.9 (**Appendix 2**). Aspects of the layout which have changed and are relevant to the LVIA are described in **Section 4.4** of this report.

The Landscape Context and Site Landscape

6.1.3. The Site lies either side of the A642 Wakefield Road, between Overton to the east and Grange Moor to the west. The Site lies within Kirklees District and the county of West Yorkshire. The boundary between Kirklees District and Wakefield District lies immediately to the east of the Site.

6.1.4. The Site comprises a total of eight parcels of land (plus an additional parcel required for the connection to the national grid), three to the south and six to the north of Wakefield Road. Some of the parcels comprise multiple fields, while others are formed by single fields. The fields are used predominantly for arable cropping and are of varying shapes and sizes. Both the Site and the surrounding landscape are undulating and well-treed.

6.1.5. The Site lies within LCA *N1: Emley Moor*, within the *Rolling Wooded Farmland* LCT, as described in the KDLCA. The *South East Coalfield* and *Calder Valley* LCTs lie to the east and north-east of the Site, within Wakefield District.

6.1.6. The Site and the immediately surrounding area are not located within any landscape designations, national/statutory or local/non-statutory. The Site lies within the Green Belt.

Landscape Value

6.1.7. The overall character of the Site and surrounding area is defined by undulating, sometimes elevated, topography; strong tree cover in the form of numerous small woodlands and tree belts; and a range of settlements of varying sizes linked by a

network of roads. Long-distance views are possible from some locations, often towards the larger settlements of Huddersfield, Dewsbury and Wakefield, but inter-visibility is more limited elsewhere. There are a number of PROWs within or close to the Site which allow close-up views, and also some residential properties in close proximity to the Site. Overall, the value of the landscape of the Site and the surrounding area is considered to be **medium**.

Visibility of the Site from the Surrounding Area

6.1.8. Analysis of the modelled ZTVs (bareground and screened) combined with the results of the field survey indicate that views of the Site are restricted to:

- Narrow bands of land around Upper Denby, Briestfield, Whitley Lower and Thornhill Edge to the north;
- Land within the immediate environs to the Site to the north-east, with a further area of visibility on the north-east side of the Calder Valley on the edge of Ossett;
- Land to the east of the Site, notably on the western and northern edges of Middlestown and Overton;
- Very restricted areas to the south-east of the Site towards Midgley;
- Land immediately to the south of the Site between the A642 and the northern edge of Flockton;
- Areas of higher ground further to the south around Emley and Emley Moor; and
- A band of land between the western part of the Site and Grange Moor.

Potential Visual Receptors

6.1.9. Potential visual receptors include:

- Residents of certain properties:
  - On the southern edge of Thornhill and Thornhill Edge.
  - On the south-west edge of Ossett.
  - On the western edge of Middlestown and Overton.
  - On the northern edge of Flockton and Flockton Green.
  - On the northern edge of Emley.
  - On the southern edge of Whitley Lower.
  - On the southern side of Briestfield.

- At Upper Denby and Denby Grange.
- At the converted farmstead known as The Rookery on the A642.

- Users of the A642, Grange Lane, Denby Lane, and a number of other minor roads in the vicinity of Upper Denby, Briestfield, Whitley Lower, Thornhill Edge, Middlestown/Overton, Flockton/Flockton Green, and Emley.
- Users of:
  - Footpaths KIR/43/10 (part of the Kirklees Way) on the edge of Parcel 2.
  - Footpaths KIR/103/40, KIR/104/10, KIR/104/30, KIR/104/20, KIR/104/30, KIR/103/20, KIR/103/10, KIR/103/50 (part of the Kirklees Way), and KIR/103/60 (part of the Kirklees Way) to the south of the A642 between Parcels 4 and 5.
  - Bridleways KIR/229/20, KIR/229/10 and KIR/42/10 which together follow Denby Grange Lane to the west and north of Parcel 1.
  - Footpath KIR/38/10 to the west of Parcel 1.
  - Footpaths KIR/44/20, KIR/44/30, KIR/205/10, Sitlington 21 and Sitlington 22 to north-east of the Site.
  - Users of a number of other more distant PROWs to the north and south of the Site.

6.2. The Proposed Development

6.2.1. The Proposed Development is described in **Section 4**. It comprises a fixed solar array arranged in rows from north to south. The solar PV panels would be 2.8 m in height. The Proposed Development also includes 17 transformer units, a substation, deer fencing, and CCTV masts.

6.2.2. Proposed landscape mitigation is shown on the LEEP (see **Figure 13**). Approximately 665 m of new hedgerows would be planted[9]. Approximately 3300 m of existing hedgerows would be enhanced. Approximately 2.05 ha of tree and shrub belts would be planted[10]. Approximately 61 new hedgerow trees would be planted. In addition, there

[9] This figure is slightly lower than as quoted for the planning submission scheme because one road-side hedgerow has been replaced with a tree and shrub belt, which is measured separately.

[10] 1.42 ha at 2 m centres, and 0.63 ha at 1 m centres.

would be ca. 63 ha of neutral grassland under the rows of PV panels, and 35 ha of tussocky grassland and wildflowers. The ecological enhancement area (tussocky grassland and pond creation) covers 2.3 ha.

6.3. Landscape Effects

Sensitivity of the Site and Surrounding Area

6.3.1. The following factors are considered relevant with respect to the susceptibility of the landscape to the Proposed Development:

- The undulating topography and strong tree cover reduces inter-visibility between the Site and much of its environs, allowing the local landscape to accommodate low-level development of the type proposed.
- The existing vegetation pattern provides an appropriate context for further vegetation to be included as part of the Proposed Development.
- High-voltage power lines and steel-lattice pylons cross the landscape in the vicinity of the Site. There are also distant views towards the Emley Moor transmitter to the south-west, and towards extensive settlements associated with the Calder Valley – e.g., Huddersfield, Dewsbury and Wakefield. All these built elements are notable features in the landscape and reduce the susceptibility of the landscape to change arising from the Proposed Development.

6.3.2. The local landscape is considered to be of **medium** value and **medium** susceptibility to development of the type proposed. As previously noted, the KDLCA does not provide a formal assessment of landscape sensitivity for the different LCAs, though a number of *'valued landscape features and attributes'* are noted (see Paragraph 3.1.5). Similarly, the LCAWD does not provide a formal assessment of landscape sensitivity for the different LCTs within the district.

6.3.3. Overall, this analysis supports the conclusion that the landscape of the Site and the immediate surrounding area has a **medium** sensitivity to the proposed development.

Summary of Landscape Effects

6.3.4. The landscape effects of the development are described in full in **Section 5.1** of this report.

6.3.5. The assessment considers scale, extent and duration/reversibility as key aspects of the

magnitude of landscape and visual effects. For the proposed development, these considerations are as follows:

- *Scale:* The scale of existing landscape elements that would be lost and the scale of change that would arise from the introduction of new elements is considered to be medium. The various tree belts and woodlands that help to visually break up the different parcels within the Site are particularly important in this respect.
- *Extent:* The extent of the impact of the Proposed Development on landscape character would largely be contained within the Site itself and to parts of the local landscape within a 0.5 km radius of the Site. There would be minor experiential/perceptual effects on the wider setting of the Site.
- *Duration:* The Proposed Development would be operational for a period of 40 years and the duration of effects arising would, therefore, be medium-to-long-term when considering the establishment of mitigation.
- *Reversibility:* The impact of the development could be reversed in the future with removal of the solar PV development from the Site.

6.3.6. The following table gives a summary of landscape effects which would arise.

Table 6.1: Summary of Landscape Effects
(principal effects are those greater than moderate and are shaded in grey)

Receptor	Phase	Magnitude of Effect	Significance	Nature of Effect
Site (medium sensitivity) *Direct effects on fabric and character*	Completion	Large	Major	Adverse
	Medium-to-long-term	Large	Major	Adverse
Surrounding area in LCA *N1: Emley Moor*, and *South East Coalfield* and *Calder Valley* LCTs (medium sensitivity) *Indirect effects on character*	Completion	Small	Minor	Adverse
	Medium-to-long-term	Very small to negligible	Negligible	-

6.4. Visual Effects

6.4.1. The visual assessment (**Section 5.2**) refers to 13 representative viewpoints (**Figures 8.1** to **8.15** and **9.1** to **9.15**), ZTV plans (**Figures 6a** to **c**) and photomontages (**Figures 11.1** to **11.4**).

- Within 1 km of the Site to the north-east and east, including certain properties on the edge of Middlestown and Overton.

- Within 0.5 km to the south and west, including certain properties on the edge of Flockton and Flockton Green.
- Within two further broadly east-west aligned strips of land to the north of the Site – either side of Briestfield, and between Whitley Lower and Thornhill Edge.
- On higher ground in the vicinity of Emley.

6.4.2. There is also an area of theoretical visibility on the south-west edge of Ossett, approximately 4 km to the north-east of the Site.

6.4.3. Fieldwork undertaken in the landscape surrounding the Site confirms that the visibility of the Site is more limited than as illustrated by the ZTV plans, due to the screening effects of field-boundary vegetation, which includes outgrown and unclipped hedgerows and hedge trees. Within this undulating and well-treed landscapes, low level development would be readily absorbed into the landscape, with visibility generally decreasing with increasing distance from the Site.

Summary of Visual Effects

6.4.4. The following table provides a summary of effects on views from nearby settlement, roads and PROWs.

Table 6.2: Summary of Visual Effects
(principal effects are those greater than moderate and are shaded in grey)

Receptor	Phase	Magnitude of Effect	Significance	Nature of Effect
Residents of <u>certain properties</u> in nearby settlements (high sensitivity receptors)				
Thornhill and Thornhill Edge	Completion	Small	Moderate	Adverse
	Medium-to-long-term	Small	Moderate	Adverse
Ossett and Calder Valley	Completion	Small-to-negligible	Minor	Adverse
	Medium-to-long-term	Small-to-negligible	Minor	Adverse
Overton and Middlestown	Completion	Small	Moderate	Adverse
	Medium-to-long-term	Small	Moderate	Adverse
Flockton and Flockton Green	Completion	Medium	Major-to-moderate	Adverse
	Medium-to-long-term	Small	Moderate	Adverse

Receptor	Phase	Magnitude of Effect	Significance	Nature of Effect
Emley	Completion	Small	Moderate	Adverse
	Medium-to-long-term	Small	Moderate	Adverse
Grange Moor	Completion	No discernible change	No discernible effect	-
	Medium-to-long-term	No discernible change	No discernible effect	-
Whitley Lower	Completion	Small-to-negligible	Minor	Adverse
	Medium-to-long-term	Small-to-negligible	Minor	Adverse
Briestfield	Completion	Small	Moderate	Adverse
	Medium-to-long-term	Small	Moderate	Adverse
Upper Denby and Denby Grange	Completion	Small	Moderate	Adverse
	Medium-to-long-term	Small	Moderate	Adverse
The Rookery	Completion	Medium	Major-to-moderate	Adverse
	Medium-to-long-term	Small	Moderate-to-minor	Adverse
Road users (low or medium sensitivity receptors, depending on road type)				
A642 Wakefield Road *Crosses the Site*	Completion	Medium to large	Moderate	Adverse
	Medium-to-long-term	Medium to small	Minor	Adverse
Grange Lane	Completion	Large	Major-to-moderate	Adverse
	Medium-to-long-term	Medium to small	Moderate-to-minor	Adverse
Sections of other minor roads in the vicinity of Upper Denby, Briestfield, Whitley Lower, Thornhill Edge, Middlestown/Overton, Flockton/Flockton Green, and Emley	Completion	Small	Minor	Adverse
	Medium-to-long-term	Small	Minor	Adverse
Users of PROWs (high sensitivity receptors)				
Footpath KIR/43/10 (part of the Kirklees Way) *Western edge of Parcel 2*	Completion	Very large	Major adverse	Adverse
	Medium-to-long-term	Small	Major-to-moderate	Adverse
Footpaths KIR/103/40 & KIR/104/10	Completion	Very large to medium	Major adverse	Adverse

Receptor	Phase	Magnitude of Effect	Significance	Nature of Effect
From Grange Lane south along western edge of Parcel 5 Flockton Green, though mapping shows the 103/40 turning south-west part-way along Parcel 5 western boundary	Medium-to-long-term	Very large to small	Major-to-moderate	Adverse
Various footpaths crossing the field known as The Rough between Parcels 4 and 5, including: KIR/104/30 KIR/104/20 KIR/103/20 KIR/103/10 KIR/103/50 (part of the Kirklees way) KIR/103/60 (part of the Kirklees Way)	Completion	Large	Major	Adverse
	Medium-to-long-term	Small to large	Moderate to Major-to-moderate	Adverse
Bridleways KIR/229/20 + KIR/229/10 + KIR/42/10 Denby Grange Lane *Adjacent to Parcel 1 – considered in terms of the overall route*	Completion	Medium to small	Moderate	Adverse
	Medium-to-long-term	Small to negligible	Moderate-to-minor	Adverse
Footpath KIR/38/10 *West of Parcel 1*	Completion	Small	Moderate-to-minor	Adverse
	Medium-to-long-term	Small	Moderate-to-minor	Adverse
Footpaths KIR/44/20 KIR/44/30 KIR/205/10 (part of Wakefield Way) Sitlington 21 & 22 *North-east of Site*	Completion	Small	Moderate	Adverse
	Medium-to-long-term	Negligible	Minor	Adverse
Footpath KIR/107/10 *West of Parcel 4*	Completion	Small	Moderate	Adverse
	Medium-to-long-term	Small to negligible	Minor	Adverse

6.5. Conclusions

The Principal Effects of the Proposed Development

6.5.1. The following table summarises the principal effects of the Proposed Development, which are considered to be those which would be of greater than moderate significance at any assessed timescale.

Table 6.3: Summary of Principal Landscape and Visual Effects (principal effects are those greater than moderate and are shaded in grey)

Receptor / Effect	Phase	Magnitude of Effect	Significance	Nature of Effect
Landscape character (medium sensitivity)				
Site *Direct effects on fabric and character*	Completion	Large	Major	Adverse
	Medium-to-long-term	Large	Major	Adverse
Residents of certain properties in nearby settlements (high sensitivity receptors)				
Flockton and Flockton Green	Completion	Medium	Major-to-moderate	Adverse
	Medium-to-long-term	Small	Moderate	Adverse
The Rookery	Completion	Medium	Major-to-moderate	Adverse
	Medium-to-long-term	Small	Moderate-to-minor	Adverse
Road users (low or medium sensitivity receptors, depending on road type)				
Grange Lane	Completion	Large	Major-to-moderate	Adverse
	Medium-to-long-term	Medium to small	Moderate-to-minor	Adverse
Visual Effects on Users of PROWs (high sensitivity receptors)				
Footpath KIR/43/10 (part of the Kirklees Way) *Western edge of Parcel 2*	Completion	Very large	Major adverse	Adverse
	Medium-to-long-term	Small	Major-to-moderate	Adverse
Footpaths KIR/103/40 & KIR/104/10 *From Grange Lane south along western edge of Parcel 5 Flockton Green, though mapping shows the 103/40 turning south-west part-way along Parcel 5 western boundary*	Completion	Very large to medium	Major adverse	Adverse
	Medium-to-long-term	Very large to small	Major-to-moderate	Adverse
Various footpaths crossing the field known as The Rough between Parcels 4 and 5, including: KIR/104/30, KIR/104/20, KIR/103/20, KIR/103/10, KIR/103/50, KIR/103/60 (including parts of the Kirklees Way)	Completion	Large	Major	Adverse
	Medium-to-long-term	Small to large	Moderate to Major-to-moderate	Adverse

Overall Conclusion

6.5.2. The Proposed Development is well located. The undulating topography and strong levels of tree cover serve to limit views towards the Site from much of the surrounding area. The Proposed Development would be low level, with the majority of structures

being below 3 m in height. The design of the scheme has also incorporated various landscape measures to reduce landscape and visual effects, including extensive new tree and shrub belts, hedgerows and hedgerow enhancement, and numerous hedgerow trees.

6.5.3. Following post-submission discussions with planning and landscape officers from KC, the layout has been amended (to version 4.9) to include additional landscape measures. These have reduced effects for receptors particularly in the medium-to-long-term as the landscaping matures, including: users of Wakefield Road (A642) (e.g., viewpoint 2); residents of the dwellings at the Rookery on Wakefield Road (see paragraphs 5.2.29 and 5.2.34); and users of various paths crossing the area known as the Rough between Parcels 4 and 5 (see **Table 5.4**).

6.5.4. The majority of landscape and visual effects would arise within the close landscape setting of the Site up to approximately 0.5 km distance. Major effects would be limited to the immediate environs to the Site, while more limited effects would occur between approximately 0.5 km and 1 km from the Site.

6.5.5. The landscape mitigation proposed (**Figure 13**) and its ongoing management as described in the *Landscape and Ecological Enhancement Plan*, would help to integrate the solar development into the surrounding landscape. The effectiveness of the mitigation would increase as the proposed vegetation matures, and in the medium-to-long-term, the proposed planting would improve the integration of the Proposed Development into the landscape and further reduce the impact on views.

6.5.6. The significance of direct landscape effects arising from the Proposed Development would be **major adverse**, and limited to the Site itself.

6.5.7. The significance of indirect landscape effects on the surrounding landscape would be **minor adverse** on completion and **negligible** in the medium-to-long-term.

6.5.8. There would be no effects on designated landscapes, and no notable effects on the openness of the Green Belt.

6.5.9. The main visual effects would arise for:

- Users of PROWs which cross the Site or run along or near to its boundaries (up to **major adverse** significance on completion and up to **major-to-moderate adverse**

significance in the medium-to-long-term).

- Occupants of residential properties close to the Site (up to **major-to-moderate adverse** significance on completion and up to **moderate adverse** significance in the medium-to-long-term).
- Users of Grange Lane as it passes through the Site (**major-to-moderate adverse** significance on completion and **moderate-to-minor adverse** significance in the medium-to-long-term).

6.5.10. The assessment concludes that, while some effects would be noticeable in the immediate vicinity of the Site, there is capacity for the landscape to accommodate the Proposed Development without causing landscape or visual harm to the wider surrounding area. The landscape and visual effects as assessed would be limited in scale and extent and some effects would reduce over time as the proposed mitigation planting matures. The effects would be wholly reversible with the removal of the Proposed Development and the reinstatement of present land management.

6.5.11. Work undertaken on the scheme layout since planning submission has allowed additional landscape measures to be included in layout version 4.9. These will reduce effects for various receptors (see paragraph 6.5.3) in the medium-to-long term relative to the submitted scheme.

Appendix 1: Methodology

Scope of Landscape and Visual Impact Assessment and this Study

The European Landscape Convention (ELC) defines landscape as, '*…an area, as perceived by people, whose character is the result of the action or interaction of natural and/or human factors*' (Council of Europe, 2000). The ELC supports a holistic approach to landscape planning and covers, '*…natural, rural, urban and peri-urban areas. It includes land, inland water and marine areas. It concerns landscapes that might be considered outstanding as well as everyday or degraded landscapes.*'

LVIA considers landscape and visual effects separately as '*related but very different considerations*' (LI and IEMA, 2013[i]; paragraph 2.20):

- **Landscape assessment** considers the effects of the proposed development on the landscape as a resource.
- **Visual assessment** considers the effects of the proposed development on specific views and on the general visual amenity experienced by people.

The scope of LVIA is derived from the Town and Country Planning (Environmental Impact Assessment (EIA)) Regulations 2011, Schedule 4 of which states that EIA must include: '*A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development…*' With respect to landscape and views, an LVIA typically considers the direct and indirect effects of a proposal, its potential cumulative effects, considers the changes which would arise over time, and whether those changes would be beneficial, neutral or adverse.

The proposed development has been screened as not requiring EIA. The study is a full LVIA and is provided as an independent and impartial assessment of the landscape and visual effects that would arise as a result of the proposed development. This LVIA considers the existing landscape, the sensitivity of landscape and visual receptors, and considers the magnitude and significance of landscape and visual effects which could arise. The approach followed is in line with guidance provided by the LI (*GLVIA3 Statement of Clarification 1/13 10-06-13*).

This methodology is structured as follows:

A1.2 The Nature of Landscape and Visual Effects

A1.3 Appraisal Criteria

A. Sensitivity

B. Magnitude

C. Significance

A1.4 Residential Amenity

A1.5 Zone of Theoretical Visibility Analysis

A1.6 Photomontages.

A1.1 Study Area

The study area has been determined through fieldwork and desk study and has been informed by the appraisal itself. The study area is in proportion with the zone in which the principal landscape or visual effects could arise. Preliminary ZTVs were used to establish a preliminary 5 km radius area for desk study. In the landscape surrounding the Site, fieldwork indicated that topography and woodland mean that the principal landscape or visual effects of this development would be more local than this. Accordingly, the focus of this report is on receptors within 2 km of the Site. To keep the scope proportionate, only receptors within the study area for which or for whom noticeable effects could arise are considered.

A1.2 The Nature of Landscape and Visual Effects

Direct and Indirect Effects

The landscape and visual resource of an area can be affected both directly and indirectly. Visual impacts are always direct because an object needs to be seen for a visual impact to arise. Landscape impacts on the other hand can be either direct or indirect. Change which affects on-site physical features (i.e., vegetation, buildings and landform), or the character area in which the Site is located, is direct, whereas an impact on the character of surrounding landscape character areas is indirect. Indirect impacts tend to be less significant than direct ones.

In general, the scope of this LVIA is:

- **Direct** (primary) effects on landscape features, the character of the Site, and views; and
- **Indirect** (secondary) effects on the surrounding landscape character.

Cumulative Effects

The nature of cumulative landscape and visual effects are described in detail in section 7 of LI

and IEMA (2013). As a summary, the following cumulative effects could potentially arise with two or more developments (terms used are from Scottish Natural Heritage (SNH) (2012); pages 10/11, see also footnote 11):

- **Cumulative landscape** effects: where two or more projects in combination create new landscape types (e.g., similar to large-scale afforestation). Landscape effects are not necessarily negative and may include other pressures such as longer-term incremental change.
- **Combined visual** effects: where it is possible to see two or more projects from one location, either *in combination* (in the viewer's same field of view at any one time), or *in succession* (in different fields of view from the same location).
- **Sequential visual** effects: where the viewer has to move through the landscape to see different projects.

As with landscape and visual effects, cumulative effects vary depending on the sensitivity of the receptor and the magnitude of the change in terms of the scale, nature, duration, frequency of combined and sequential views (glimpses or more prolonged views; oblique, filtered or more direct views; time separation between sequential views). Cumulative effects also vary depending on the relative impact of each project with respect to visual amenity.

The screening opinion received from KC considered that the Proposed Development did not require a cumulative assessment.

Assessment Timescales

In this assessment, potential effects are considered according to the following timescales, which allow an understanding of the changes which may occur in the landscape as a result of the development over time, and judgements to be made about the duration and reversibility of effects (see also the **Section A1.3B** on 'Magnitude' below):

- **During construction**: focussing on specific construction-related landscape and

[11] Much of the expertise in cumulative assessment in recent practice is derived from LVIAs of wind farms which can have significant cumulative effects. SNH have led much of the research in this field, and while guidance on wind farms or SNH's influence is not specifically relevant to this LVIA, the thinking as set out by SNH is transferable to other forms of development and this report.

visual effects.

- **On completion**: the effects when the construction phase is complete and the operational phase of the project starts.
- **Medium-term**: taken to be up to 15 years post completion: this timescale allows the assessment to consider effects once the mitigation vegetation proposed for the Site has become established and has been managed to the stipulated height.
- **Long-term**: taken to be 15 to 40 years post completion and for the duration of the operational life of the Proposed Development.

Adverse, Beneficial and Neutral Effects

The methodological background to whether effects are adverse, beneficial or neutral is based on the aim for assessment work to influence a proposed development to reduce adverse effects:

> *'In reporting on the significance of the identified effects the main aim should be to draw out the key issues and ensure that the significance of the effects and scope for reducing any negative/adverse effects are properly understood by the public and the competent authority before it makes its decision' (LI and IEMA, 2013; paragraph 3.35).*

Whether effects should be adverse, beneficial or neutral is recognised as a 'challenging' aspect of assessment (LI and IEMA, 2013; 5.37). Further methodological background is provided in paragraphs 5.37 and 6.29 for landscape and visual effects respectively.

> *'One of the more challenging issues is deciding whether the landscape effects should be categorised as positive or negative. It is also possible for effects to be neutral in their consequences for the landscape. An informed professional judgement should be made about this and the criteria used in reaching the judgement should be clearly stated. They might include, but should not be restricted to:*
>
> - *The degree to which the proposal fits with existing character;*
> - *The contribution to the landscape that the development may make in its own right, usually by virtue of good design, even if it is in contrast to existing character.' (LI and IEMA, 2013; paragraph 5.37).*
>
> *'As with landscape effects an informed professional judgement should be made as to whether the visual effects can be described as positive or negative (or in some cases neutral) in their consequences for views and visual amenity. This will need to be based on a judgement about whether the changes will affect the quality of the visual experience for those groups of people who will see the changes,*

given the nature of their existing views.' (LI and IEMA, 2013; paragraph 6.29).

Effects in this assessment are described as follows:

- **Adverse**, for example the loss of valuable landscape elements, degradation of landscape character or loss of integrity in terms of designated landscapes.
- **Beneficial**, for example the removal of inappropriate or damaging landscape elements, enhancement of key landscape elements and landscape character, or introduction of positive landscape elements.
- **Neutral** effects are those which are on balance neither adverse nor beneficial. Neutral may reflect an absence of harm. Neutral may sometimes be used as a judgement where there are both adverse and beneficial aspects of an effect.

The decision regarding whether effects are adverse, beneficial or neutral is set out in the conclusions for effects of greater than negligible magnitude and is made using professional judgement and separately to the determination of their magnitude.

For adverse landscape or visual effects, mitigation is described or recommended (proposals for preventing/avoiding, reducing, or offsetting or compensating for the adverse effects), or has been recommended during previous iterations of the appraisal. Residual effects remaining after mitigation are summarised at the end of the report.

A1.3 Assessment Criteria

The following are the main terms used in this assessment:

- The **sensitivity** of receptors (landscape or visual)[12], which depends upon the value attached to the landscape or view and the susceptibility to harm due to the development proposal.
- The **magnitude** of an effect (the change brought about by the development proposal), which depends upon the scale and geographical extent of the change, and its duration and reversibility.

[12] Landscape receptors are *'defined aspects of the landscape resource that have the potential to be affected by a proposal.'* Visual receptors are *'individuals and/or defined groups of people who have the potential to be affected by a proposal.'* (From the glossary to LI and IEMA, 2013).

The above are determined using a combination of quantitative (objective) and qualitative (subjective) methods, and are assessed using professional judgement.

A. Sensitivity

The sensitivity of landscape receptors depends primarily upon the value attached to the landscape and the landscape's susceptibility to the development proposal.

Landscape Value

'*Landscapes and their component parts may be valued at the community, local, national or international levels… A review of existing landscape designations is usually the starting point in understanding landscape value, but the value attached to undesignated landscapes also needs to be carefully considered and individual elements of the landscape – such as trees, buildings or hedgerows – may also have value*' (LI and IEMA, 2013; paragraph 5.19).

The following influence landscape value as determined in this assessment (LI and IEMA, 2013[i]; Box 5.1):

- '***Landscape quality (condition)****: a measure of the physical state of the landscape. It may include the extent to which typical character is represented in individual areas, the intactness of the landscape and the condition of individual elements.*
- ***Scenic quality****: The terms used to describe landscapes that appeal primarily to the senses (primarily but not wholly to the visual senses).*
- ***Rarity****: The presence of rare elements or features in the landscape or the presence of a rare Landscape Character Type.*
- ***Representativeness****: Whether the landscape contains a particular character and/or features or elements which are considered particularly important examples.*
- ***Conservation interests****: The presence of features of wildlife, earth science or archaeological or historical and cultural interest can add to the value of the landscape as well as having value in their own right.*
- ***Recreation value****: Evidence that the landscape is valued for recreational activity where experience of the landscape is important.*
- ***Perceptual aspects****: A landscape may be valued for its perceptual qualities, notably wilderness and/or tranquillity.*
- ***Associations****: Some landscapes are associated with particular people, such as artists or writers, or*

events in history that contribute to perceptions of the natural beauty of the area.'

Technical Guidance Note 02/21 was published by the LI in May 2021 (LI, 2021[v]). The TGN refines the approach set out in Box 5.1, separating *'Conservation Interests'* into *'Natural Heritage'* and *'Cultural Heritage*', and refining the definitions of some of the other terms used. The TGN also adds *'Functional Value'*, defined as *'landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape'*.

Landscape value is illustrated by scale set out in **Table A1.1**.

Table A1.1: Landscape Value

Value	Typical criteria
High	High landscape quality and scenic quality. Particularly important/representative landscapes or landscape elements. Important conservation interests and recreational value due to landscape quality. Highly-valued perceptual aspects or cultural/historical associations.
Medium	Medium landscape quality and scenic quality. May contain some important/representative elements. May contain some conservation interests and recreational value and/or perceptual aspects or cultural/ historical associations of moderate value.
Low	Low landscape quality and scenic quality. Common landscapes which are not particularly important/representative examples. More limited conservation interests and recreational value and/or more limited perceptual aspects or cultural/historical associations of value.

Landscape Susceptibility

Susceptibility can be defined as, '*the ability of the landscape receptor (whether it be the overall character or quality/condition of a particular landscape type or area, or an individual element and/or feature, or a particular aesthetic or perceptual aspect) to accommodate the proposed development without undue negative consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies*' (LI and IEMA, 2013; paragraph 5.40).

Susceptibility of landscape areas is influenced by their characteristics and is often considered in district or county landscape character assessments or capacity studies. For designated landscapes, susceptibility may also relate to the special qualities for which the designation is made. The activity and expectations of people within landscapes which are used for access or recreation may also influence susceptibility.

Individual assessment of the susceptibility of receptors is made in relation to the specific development proposal as part of the assessment of effects. Landscape susceptibility is determined according the scale set out in **Table A1.2**.

Table A1.2: Landscape Susceptibility

Susceptibility	Typical criteria
High	A low potential to accommodate the specific proposed development without undue negative consequences. A more vulnerable landscape unlikely to be able to accommodate the Proposal with a low risk of harm.
Medium	A moderate potential to accommodate the specific proposed development without undue negative consequences. A moderately vulnerable landscape which may be able to accommodate the Proposal with a low risk of harm.
Low	A high potential to accommodate the specific proposed development without undue negative consequences. A less vulnerable landscape likely to be able to accommodate the Proposal with a low risk of harm.

Landscape Sensitivity

Table A1.3 illustrates typical judgements which might be made in assessing landscape receptor sensitivity, which take account of landscape value and landscape susceptibility. It should be noted that, '*there can be complex inter-relationships between the value attached to landscape receptors and their susceptibility to change which are especially important when considering change within or close to designated landscapes*' (LI and IEMA, 2013; paragraph 5.46). For this reason, judgements relating to how value and susceptibility combine to determine sensitivity are made on a case-by-case basis and explained in the assessment as necessary.

Table A1.3: Landscape Sensitivity

Sensitivity	Typical criteria
High	A high-quality landscape of particular importance or representativeness, with important conservation or recreational value and valued perceptual aspects or cultural or historic associations. A landscape valued at an international, national or regional scale. A landscape which has a high susceptibility to the proposed change. Minor changes cannot be accommodated without impact on value and/or loss of character or no more than minor changes can be compensated by replacement or substitution.
Medium	A medium-quality landscape which may contain some important or representative elements, and have some conservation or recreational value, and valued perceptual aspects or cultural or historic associations. A landscape valued at a regional, district or community scale. A landscape of medium susceptibility to the proposed change. Minor to moderate change may be accommodated but needs to be carefully dealt with. Minor changes can be accommodated without impact on value and/or loss of character or moderate changes can be reduced or eliminated by replacement or substitution.
Low	A low-quality landscape which is not particularly important or is representative of a common type with limited conservation or recreational interests, or limited value placed in perceptual aspects or cultural or historic associations. A landscape valued at the district or community scale. Potentially a damaged or derelict landscape.

	A low susceptibility to the proposed change. Moderate changes can be accommodated without impact on value and/or loss of character or more substantial changes can be reduced or eliminated by replacement or substitution.

Visual Sensitivity

The sensitivity of visual receptors can depend on:

- Their **susceptibility** to change, which 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 focussed on the views and the visual amenity they experience at particular locations*' (LI and IEMA, 2013; paragraph 6.32).
- The **value** attached to the view, for example whether it appeals to locals, visitors, or whether it is cited in books, guides and maps, or whether the view might be recognised through planning designations or in relation to heritage designations.

For visual receptors, value and susceptibility are closely related. Individuals or groups of receptors are assessed on a case-by-case basis and the thinking in relation to judgements is recorded in the assessment. **Table A1.4** illustrates the typical judgements which may be made in assessing the sensitivity of visual receptors.

Table A1.4: Visual Receptor Sensitivity (information adapted in part from LI and IEMA, 2013; paragraphs 6.33 and 6.34)

Sensitivity	Typical criteria
High	People at viewpoints in a high-value landscape, recognised in published maps or guides (e.g., visitors to nationally designated areas of public and private open space such as National Parks, Areas of Outstanding Natural Beauty or Heritage Coasts). Residents at home where views contribute to the landscape setting enjoyed by residents. People who are engaged in leisure activities intrinsic to which is an appreciation of the landscape or surroundings, for example users of national trails, long-distance paths or local footpaths through high-valued landscapes. Visitors to heritage assets or other important attractions, or travellers on routes where views are important to the experience.
Medium	People at viewpoints in a medium-value landscape (e.g., visitors to locally designated areas of public and private open space such as Areas of Great Landscape Value, or Country Parks). People who have a moderate interest in their surroundings whilst working or engaged in leisure activities, for example those engaged in outdoor sports such as fishing or golf, or using local footpaths through moderately-valued landscapes, or users of local roads designated as National Cycle Routes or national trails. Travellers on road, rail or other routes may fall into an intermediate category depending on whether travel involves appreciation of the landscape.
Low	People at viewpoints in a low-value landscape. People involved in outdoor sport or recreation not involving or depending upon appreciation of views in the landscape.

	People at places of work whose attention is focussed on their work or activity, not on their surroundings, and where the setting is not important to quality of working life. People who have a transient interest in the surrounding landscape whilst engaged in other activities, for example while working or travelling through an area on an occasional or functional basis (e.g., users of major roads, employees of businesses and industry, users of local public rights of way associated with highways or local routes whose primary function is access between two places).

B. Magnitude

The assessment considers **scale**, **extent** and **duration/reversibility** as key aspects of the magnitude of landscape and visual effects (LI and IEMA, 2013; paragraphs 5.48 and 6.38).

Scale

For **landscape** receptors, scale relates to:

- '*the extent of existing landscape elements that will be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape – in some cases this may be quantified;*
- *the degree to which aesthetic or perceptual aspects of the landscape are altered either by the removal of existing components of the landscape or by addition of new ones – for example, removal of hedges may change a small-scale, intimate landscape into a large-scale, open one, or introduction of new buildings or tall structures may alter open skylines;*
- *whether the effect changes the key characteristics of the landscape, which are critical to its distinctive character*' (LI and IEMA, 2013; paragraph 5.49).

For **visual** receptors, scale relates to:

- '*the scale of the change in the view with respect to the loss or addition of new features in the view and changes in its composition, including the proportion of the view occupied by the proposed development;*
- *the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, height, colour and texture;*
- *the nature of the view of the proposed development, in terms of the relative amount of time over which it will be experienced and whether views will be full, partial or glimpses*' (LI and IEMA, 2013[i]; paragraph 6.39).

Extent

For **landscape** receptors, extent is the '*geographical area over which the landscape effects will be felt*' (LI

and IEMA, 2013; paragraph 5.50). Generally, effects may occur:

- '*at the site level, within the development site itself;*
- *at the level of the immediate setting of the site;*
- *at the scale of the landscape type or character area within which the proposal lies;*
- *on a larger scale, influencing several landscape types or areas.*'

For **visual** receptors extent 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*' (LI and IEMA, 2013; paragraph 6.40).

Duration and reversibility

For both **landscape** and **visual** receptors: '*These are separate but linked considerations. Duration can usually be simply judged on a scale such as short term, medium term, or long term, where, for example, short term might be zero to five years, medium term five to ten years and long term ten to twenty-five years. There is no fixed rule on these definitions…Reversibility is a judgement about the prospects and practicality of the particular effect being reversed in, for example, a generation*' (LI and IEMA, 2013; paragraphs 5.51, 5.52 and 6.41).

Table A1.5 illustrates the judgements made with respect to magnitude, which take account of **scale**, **extent** and **duration/reversibility**. Effects are judged on a case-by-case basis applying professional judgement for the specific project and host landscape.

Table A1.5: Magnitude

	Landscape	**Visual**
	The magnitude of change in relation to ***physical elements and/or landscape character****. Considerations include* ***scale****,* ***extent****, and* ***duration/reversibility****.*	*The magnitude of change in relation to* ***views and/or visual amenity as generally perceived by observers*** *– this is related to the degree of landscape impact magnitude. Considerations include* ***scale****,* ***extent****, and* ***duration/reversibility****.*
Negligible	Indiscernible or barely discernible change - project components would tend to go unnoticed in the wider landscape.	Indiscernible or barely perceptible change - project components would tend to go unnoticed in views.
Small	Small levels of change - project components would be present in the landscape but would generally be perceived as a background component of the wider landscape.	Small levels of change to views - project components would be present in the landscape but as a background component of views and would easily go unnoticed.

	Landscape	Visual
Medium	Medium levels of change – project components would be relatively prominent in the landscape but would generally appear subservient to, or in equilibrium with, the prevailing landscape characteristics.	Medium levels of change to views - project components would be relatively prominent but generally subservient, or in equilibrium with, the prevailing landscape characteristics, and would easily be noticed.
Large	Large levels of change – project components would be prominent in the landscape and would generally be perceived as a determining factor of local character.	Large levels of change to views - project components would be prominent, perceived as a determining factor in views, and would be difficult not to notice.
Very Large	Very large levels of change – project components are very prominent in the landscape and are the determining factor of local character.	Very large levels of change to views – project components would be very prominent, perceived as the determining factor in views, and would be extremely difficult not to notice.

C. Significance

Judgements about the sensitivity of a landscape or visual receptor and the magnitude of a landscape or visual effect are combined to draw conclusions about significance. Note that for both landscape and visual receptors, '*there are no hard and fast rules about what makes a significant effect, and there cannot be a standard approach since circumstances vary with the local and landscape context and with the type of proposal*' (LI and IEMA, 2013[i], paragraphs 5.56 and 6.44).

Landscape Effects

'*Significance can only be defined in relation to each development and its specific location. It is for each assessment to determine how the judgements about the landscape receptors and landscape effects should be combined to arrive at significance and to explain how the conclusions have been derived*' (LI and IEMA, 2013; paragraph 5.54). In broad terms, the significance for landscape effects can be illustrated by the extremes illustrated in the following table.

Table A1.6: Significance of Landscape Effects

More likely to be significant	Major loss or irreversible negative effects, over an extensive area, on elements and/or aesthetic and perceptual aspects that are key to the character of nationally-valued landscapes.
Less likely to be significant	Reversible negative effects of short duration, over a restricted area on elements and/or aesthetic and perceptual aspects that contribute to but are not key characteristics of landscapes of community value.

Visual Effects

'*Significance of visual effects is not absolute and can only be defined in relation to each development and its specific location. It is for each assessment to determine the approach…*' (LI and IEMA, 2013; paragraph 6.42). In broad terms, the significance of visual effects can be illustrated by the extremes in the following

table.

Table A1.7: Significance of Visual Effects

More likely to be significant	Effects on people who are particularly sensitive to changes in views and visual amenity.
	Effects on people at recognised and important viewpoints or from recognised scenic routes.
	Large-scale changes which introduce new, uncharacteristic or discordant or intrusive elements.
Less likely to be significant	Effects on people who are less sensitive to changes in views and visual amenity.
	Effects on people at local incidental viewpoints, or from local routes, the primary purpose of which is to connect two places.
	Small-scale changes which introduce forms which are already present and characteristic, or unobtrusive elements.

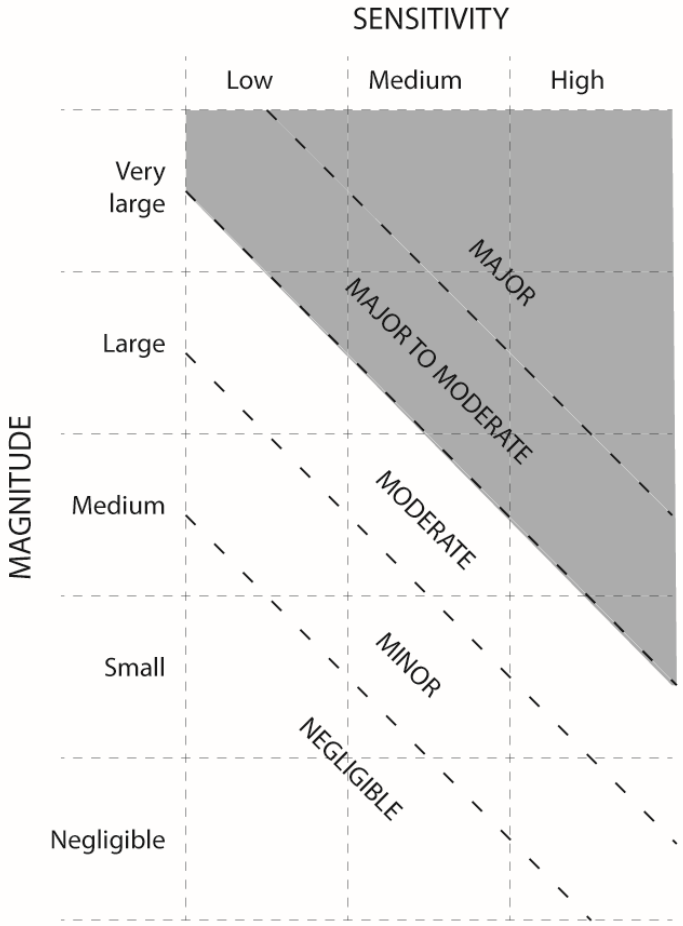
Table A1.8 illustrates how sensitivity and magnitude may combine to determine significance. Judgements are made on a case-by-case basis.

Effects of **moderate/major** or **major** significance (shaded grey in **Table A1.8**) are 'significant' in that they are the principal landscape or visual effects of the Project. The identification of 'significant' effects equally does not necessarily mean that effects would be unacceptable. Effects considered to be 'not significant' are not completely disregarded in the assessment (LI and IEMA, 2013; paragraph 3.34) but are lesser effects which are considered, with professional judgement, to be less important in decisions regarding the landscape and visual effects of the Project.

The significance classifications in **Table A1.8** run diagonally. This reflects that professional judgement is used in determining how sensitivity and magnitude combine to give significance. For example, for a medium sensitivity receptor, an effect of medium magnitude will often but not always give rise to a moderate significance effect; the effect could be judged to be major-to-moderate or moderate-to-minor in some circumstances. The reasoning behind judgements made in the assessment are explained in the assessment text.

Conclusions regarding significance are also expressed in terms of whether effects are adverse, beneficial or neutral as is described under the subheading 'Adverse, Beneficial and Neutral Effects', **Section A1.2** above.

Table A1.8: Significance (Landscape Visual Limited)



A1.4 Residential Amenity

The emphasis of the visual assessment is on publicly available views. Paragraph 6.17 of LI and IEMA (2013) notes that, '*in some instances it may [also] be appropriate to consider private viewpoints, mainly from residential properties…. Effects of development in private property are frequently dealt with mainly through 'residential amenity assessments*". Residential amenity assessments are separate from LVIAs and are normally only provided if it is considered likely at the scoping stage that effects on visual aspects of residential amenity are likely to give rise to likely significant effects. The assessment has not identified this as a concern for this development; no further consideration is given to effects on residential amenity in the LVIA. The assessment considers the changes in views which could arise for groups of properties near the Site based on fieldwork on the Site and in publicly-accessible areas.

A1.5 Zone of Theoretical Visibility Analysis

The ZTV at **Figure 6a** is a 'bareground' ZTV which take into account the underlying topography and is based on OS Terrain 5 data.

Figures 6b and **6c** are 'screened' ZTVs, which take into account the underlying topography (OS Terrain 5) as well as woodlands from the Forestry Commission's National Forestry Inventory data, with woodland assumed to be 15 m in height.

ZTVs were prepared using the Grass version 7.4.1 *r.viewshed* script (Toma, Zhuang, Richard and Metz, 2017). Reference points at a height of 3 m above existing terrain level were located at 14 locations across the Site (corresponding to the maximum height of the PV rows). Viewer height was assumed to be 1.75 m.

The ZTVs should be interpreted with reference to the notes on the ZTV plans.

A1.6 Photomontages

The photomontages (**Figure 11**) were prepared using Rhinoceros 3D.

The methods used comply with type 3 visualisations (Landscape Institute, 2019. *Visual Representation of Development Proposals Technical Guidance Note 06/19*). The enlargement factor is 100 per cent.

The back-plate images were obtained with a full frame DSLR with a 50mm lens mounted on a level tripod at 1.6m height. The 90 degree-field-of-view back-plate image was stitched in cylindrical projection using PtGUI.

The photomontages illustrate rows of solar photovoltaic panels laid out to the designed specification as shown in **Appendix 2** and the other application drawings which show details of substations, inverter plant, fencing and CCTV cameras and any other elements which may form part of the Proposed Development.

Proposed landscaping (see **Figure 13**) is also modelled in Rhinoceros 3D and is intended to give a fair representation of the proposed landscape at years 1 and 15, taking the maturing of plants into consideration. Note that native species are proposed and the vegetation selected from a sample library is intended to give a fair representation of screening provided by proposed landscaping, rather than an accurate rendering of actual native species present in the existing landscape. Hedgerows are shown with plants at 70 cm height at year 1, reaching 3 m height at year 15. Woodland is show planted on a 1.5 m spaced triangular grid, with planting height 60 –

80 cm at year 1 (25 per cent of tree species planted at 1.25 to 1.5 m at year 1), maturing to the target height of 5 to 6 m at year 15. Hedgerow trees are shown as planted at 1.5 to 1.75 m height at year 1, maturing to a target height of 6 to 7 m at year 15.

The scheme as modelled is intended a fair representation of the appearance of the proposed installation in the landscape and is appropriate for this LVIA work. The dimensions and scaling of the proposed development is as described on the elevation drawings.

The underlying terrain model is built from OS Terrain 5 data and Lidar surface model data.

The PV model was matched to the back-plate image using reference points such as pylons and other built features, and by matching the horizon line from the terrain model. Minimal adjustments were made to camera pan, tilt, rotation and field of view to achieve good alignment of reference points. Rendering was undertaken with lighting settings adjusted to reflect the date and time that the back-plate photograph was taken.

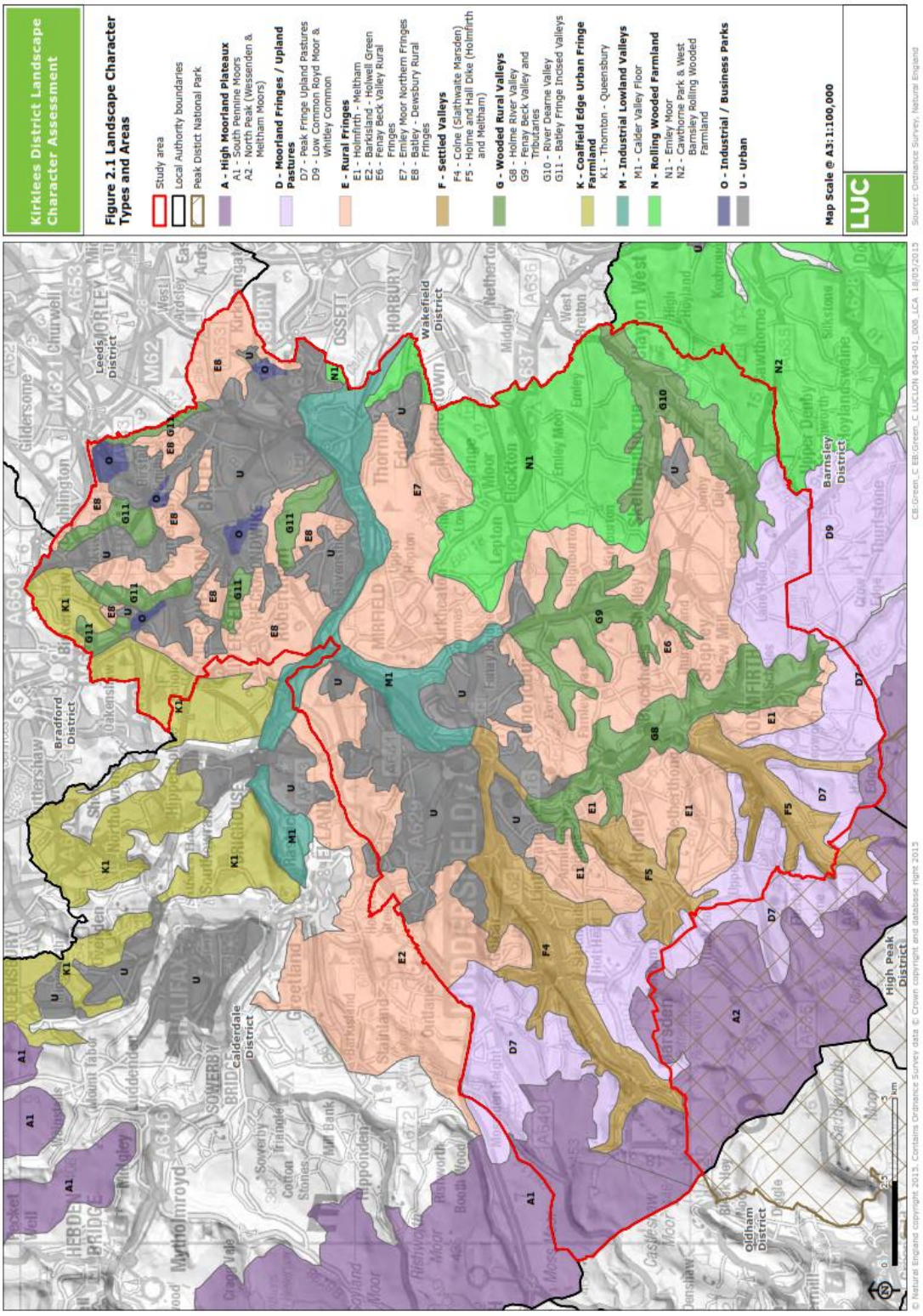
Photomontages are intended to be printed at the paper size marked on each figure and to be used in the field. If used on screen, images should be scaled to 100 per cent with the observer at a comfortable arm's length from the monitor but it must be recognised that it is preferable to use paper copies in the field so that the scale and appearance of existing landscape features can be considered alongside the photomontage.

Appendix 2: Proposed Development

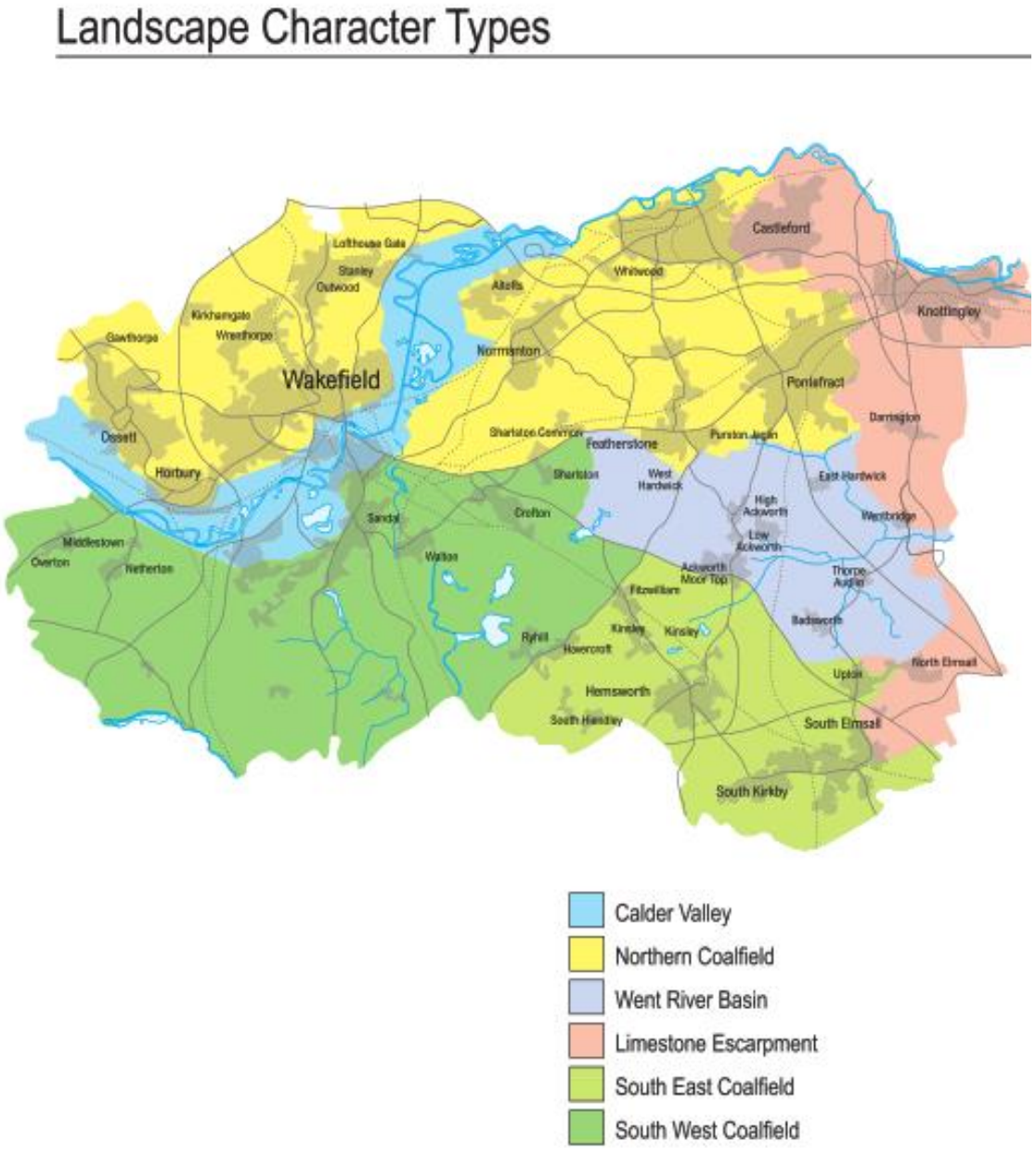
Overall Layout version 4.9 (7th June 2022)

Appendix 3: Landscape Character Maps

Kirklees Landscape Character Assessment (Kirklees Council/LUC, 2015)



Landscape Character Assessment of Wakefield District (Wakefield Metropolitan District Council, 2004)



Appendix 4: Figures

Figure 1282/1a: Location Plan (OS base 1:40,000)

Figure 1282/1b: Location Plan (OS base 1:20,000)

Figure 1282/1c: Location Plan (OS base 1:10,000)

Figure 1282/1d: Location Plan (Aerial photo base 1:10,000)

Figure 1282/2: Administrative Boundaries and Green Belt

Figure 1282/3: Topography

Figure 1282/4a: Access (Aerial photo base 1:20,000)

Figure 1282/4b: Access (OS base 1:20,000)

Figure 1282/4c: Access (Aerial photo base 1:10,000)

Figure 1282/6a: Zone of Theoretical Visibility of 3 m solar array (bareground) to 5 km

Figure 1282/6b: Zone of Theoretical Visibility of 3 m solar array (screened) to 5 km

Figure 1282/6c: Zone of Theoretical Visibility of 3 m solar array (screened) to 2 km

Figure 1282/7a: Viewpoint locations (Aerial photo base)

Figure 1282/7b: Viewpoint locations (OS base)

Figure 1282/7c: Viewpoint locations – central area near Site only (Aerial Photo base)

Figures 1282/8.1 to 8.15: Representative viewpoints – existing views (A1)

Figures 1282/9.1 to 9.15: Representative viewpoints (A3)

Figure 1282/10.1 to 10.7: Site and context photos

Figure 1282/11: Photomontages

Figure 1282/13: Landscape and Ecological Enhancement Plan

Appendix 5: Abbreviations

AGL	Above Ground Level
AOD	Above Ordnance Datum
BOAT	Byway Open to All Traffic
BRE	Building Research Establishment
CCTV	Closed Circuit Television
DNO	Distribution Network Operator
EIA	Environmental Impact Assessment
ELC	European Landscape Convention
GIS	Geographical Information System
GLVIA3	The Guidelines for Landscape and Visual Impact Assessment, Third Edition[i]
IEMA	Institute of Environmental Management and Assessment
KC	Kirklees Council
KDLCA	Kirklees District Landscape Character Assessment
LCA	Landscape Character Area
LCAWD	Landscape Character Assessment of Wakefield District
LCT	Landscape Character Type
LI	Landscape Institute
LIDAR	Light detection and ranging (a survey method)
LNR	Local Nature Reserve
LVIA	Landscape and Visual Impact Assessment
NCA	National Character Area
NHLE	National Heritage List for England
NPPF	National Planning Policy Framework
OS	Ordnance Survey
PROW	Public Right of Way
PV	Photovoltaic
RPG	Registered Park and Garden
SNH	Scottish Natural Heritage
SSSI	Site of Special Scientific Interest

TGN	Technical Guidance Note
TPO	Tree Preservation Order
ZTV	Zone of Theoretical Visibility

Appendix 6: References

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