

8 LANDSCAPE AND VISUAL

INTRODUCTION

Purpose of this Chapter

- 8.1 Amalgam Landscape, a Registered Practice of the Landscape Institute, has produced this Landscape and Visual Impact Assessment (LVIA) for a proposed solar park (*the proposed development*).
- 8.2 The LVIA was prepared by Angela Watts, a Chartered Landscape Architect, with over 25 years' experience in consultancy. The graphics, including the photomontages, were completed by Paul Shephard, Senior Consultant, with over 30 years' experience in consultancy.
- 8.3 The purpose of the LVIA is to identify and outline the existing landscape character and visual amenity receptors within the study area and to assess the potential magnitude of impact and level of effect, including a determination of their significance, on these receptors, as a result of the proposed development. Mitigation measures are proposed, including during the initial design phase, to reduce the impacts and effects of the proposed development. Impacts and effects are assessed at significant stages in the life of the proposed development, including construction, operation and de-commissioning. Residual impacts and effects, following the implementation of any mitigation measures, such as planting, are also assessed.
- 8.4 The LVIA also considers the cumulative effects of the proposed development when perceived with other consented or pending planning developments within the study area.
- 8.5 In summary, the LVIA will assist decision makers, members of the public and other interested parties by providing a clear and common understanding of the predicted landscape and visual impacts and effects of the proposed development in an impartial and professional way.

Scope of the Chapter

- 8.6 The LVIA:
 - Identifies the methodology, including defining the extent of the study areas and the detailed technical approach. The 'main' study area is a minimum of 5km radius offset from the boundaries of the proposed development site as this is where the most 'noticeable' effects may occur;
 - Describes the proposed development site and the surrounds and the existing landscape character, including landscape relevant designations and visual amenity receptors and their views within the study area;

- Identifies other under construction, consented and pending planning projects within the study area;
- Proposes mitigation measures which aim to avoid, reduce or compensate for any effects. Mitigation through siting and design during the earliest stages, as detailed in Chapter 2, is critical in reducing the potential landscape and visual effects of the proposed development. ‘Additional’ mitigation measures are also proposed, including new planting;
- Describes the magnitude of impact and the level and significance of effect, including any residual impacts and effects, on the existing landscape character and visual amenity receptors and their views as a result of the proposed development. Use is made of a computer generated Zones of Theoretical Visibility (ZTVs) to identify the locations in the study area where the proposed development could be potentially visible. Panoramic photographic views and photomontages are also used to illustrate the potential impacts and effects of the proposed development from publicly accessible viewpoints, immediately following construction – illustrating the ‘worst-case’ scenario. The panoramic photographic views and photomontages also show the extent of the operational solar schemes in the study area. The extent and location of the projects to inform the cumulative assessment is also illustrated;
- Assesses the additional cumulative effects of the proposed development in combination with other under construction, consented and pending planning projects on the surrounding landscape character and views from visual amenity receptors; and
- Provide conclusions on the overall landscape and visual effects of the proposed development.

SYNOPSIS

- 8.7 Overall, the landscape of and surrounding the proposed development consists of medium to large regular fields divided by a diverse mixture of ditches, fences and lines of hedgerows, shrubs and trees, set within the expansive levels landscape that stretches along either side of the Severn Estuary. This flat landscape is punctuated with often large settlements and major routes, including the M4 and main railway line, before rising broadly to the north towards a well-vegetated landscape of hills, ridges and valleys.
- 8.8 Within the expansive levels landscape, settlement is sparse and consists of scattered houses and farms, as well as a number of small villages, connected by a series of straight minor roads. Public rights of way are few but tend to follow the straight field pattern. The regular lines of mature vegetation crossing the levels provides enclosure with long distance views largely restricted to ‘artificial’ high points within the landscape, such as bridges.
- 8.9 The proposed development is within the Caldicot Levels Special Landscape Area (SLA). SLAs have been designated at a local level to protect areas of fine landscape quality. The proposed development is also within the Gwent Levels Landscape of Historic Interest which stretches along the coastal fringes. The SLA and Landscape of Historic Interest are however already influenced by development including numerous lines of pylons and scattered operational wind energy schemes.

There is also a consented wind turbine immediately to the north and a consented solar scheme approximately 2.1km to the west of the proposed development.

- 8.10 There are also a number of Registered Historic Parks and Gardens present and the centre of some of the villages and towns are recognised as Conservation Areas, including Redwick approximately 150m to the south and Magor, approximately 875m to the north. There are also scattered Ancient Woodlands present, mainly focussed within the higher landscape broadly to the north of the study area.
- 8.11 The proposed development is situated within a high (medium-high) sensitivity visual and sensory aspect area, within an outstanding (high) historic landscape aspect area, within an outstanding (high) sensitivity cultural landscape aspect area, within a high (medium-high) geological landscape aspect area and within an outstanding (high) landscape habitat aspect area. The sensitivity reflecting the importance of the wider levels landscape.
- 8.12 Mitigation measures during the site selection and design stages have ensured that the proposed development will have minimal direct effects on landscape elements. The proposed development's location set in medium to large, regular and relatively contained regular fields within a flat, well-vegetated landscape are also appropriate for solar development. The sensitive siting and location of the proposed development also minimises the wider impacts on landscape character, landscape relevant designations and nearby visual amenity receptors.
- 8.13 In addition, selected existing field boundary vegetation will be protected and enhanced and the characteristic reens will be sensitivity managed and enhanced, to retain and improve the landscape pattern, as well as for nature conservation and biodiversity benefits. Selected hedgerow in-fill planting to existing boundaries will also improve screening and promote the field pattern and regular landscape structure.
- 8.14 The existing containment and enclosure provided by the immediate and wider well-vegetated landscape will also ensure that the proposed development will only have minimal effects on both landscape character and visual amenity receptors and their views during construction and de-commissioning, other than in the immediate vicinity.
- 8.15 During the operational period, the proposed development will largely only be perceived from the predominantly open public right of way that borders the site immediately to the east and glimpsed from the largely enclosed public right of way immediately to the west. Glimpsed views will also be possible of the proposed development from gaps in the surrounding nearby minor road network and potentially possible from the upper stories of the few nearby residential properties. Elevated but distant views of the proposed development will also be possible from selected exposed and open locations as the landform rises to the north.
- 8.16 Although selectively perceived, the proposed development will be viewed as a contained built element, within a regular and well-vegetated landscape which has already been influenced by infrastructure and development. The majority of effects on landscape character, landscape

relevant designations and visual amenity receptors and their views will therefore be neutral largely because of the enclosure provided by the surrounding numerous lines of dense hedgerows and trees within the flat landscape and the screening vegetation focussed around residential properties, settlements and transport corridors in the immediate and wider landscape.

- 8.17 With regard to the landscape character areas, the proposed development will directly affect the selected aspect areas, as defined by LANDMAP, but will not dramatically change the characteristics of the wider landscape or affect the integrity or setting of landscape relevant designations. The proposed development will be selectively perceived in close proximity and from further afield to the north but will be viewed as a contained built element, within the expansive levels, within a well-vegetated landscape. The proposed development will fit within the existing field pattern and will not be out of scale with the surrounding landscape. The maturing and reinforcement of the existing retained vegetation, with selected ‘in-fill’ planting, will help to further integrate the proposed development into the landscape pattern.
- 8.18 Exposed views of the proposed development from visual amenity receptors will be extremely limited and will be generally only from those very few receptors in close proximity or from more distant and elevated locations to the north as well as where there are ‘gaps’ in the nearby enclosing vegetation. The proposed mitigation measures, as shown in the Illustrative Landscape Masterplan, including in-fill planting of the existing retained boundaries will help to restrict even further any potential views of the proposed development, particularly for those receptors in close proximity, over time. Relatively few visual amenity receptors will have close range views of the proposed development, the majority of views will be obscured by localised screening from vegetation, subtle variations in landform and adjacent development.
- 8.19 The addition of the proposed development, in combination with the operational and consented solar schemes in the study area will also not create a ‘solar landscape’ or dramatically change the views from surrounding visual amenity receptors into a view dominated by solar schemes.
- 8.20 In summary, the proposed development will:
- Add a relatively contained built element to the landscape;
 - Have a limited indirect influence on any designated landscapes;
 - Be set within the regular landscape pattern within mainly mature and well-vegetated field boundaries, which will be protected and enhanced through additional planting, including in-fill planting to the existing boundaries, where necessary;
 - Only be partly overlooked from very close proximity, from gaps in enclosure, the influence dramatically reducing over time and swiftly with distance from the proposed development. Although selectively perceived in close proximity, the proposed development will be a contained built element, set within a well-vegetated landscape, notwithstanding it is temporary and reversible;
 - Will be perceived from selected open and elevated locations to the north, where it has the potential to be viewed in combination with the nearby consented Llanwern solar scheme. The

addition of the proposed development will not significantly increase the perception of numerous solar schemes on either the landscape or views and therefore there will be limited additional cumulative effects as a result of the proposed development; and

- Overall, the development will have limited impacts on landscape relevant designations, landscape character and visual amenity receptors and their views.

CONSULTATION

8.21 Within the EIA Scoping Direction (12th February 2019), the approach to the LVIA, as recommended within the Scoping Report, was considered appropriate. This chapter follows this recommended approach.

8.22 In addition, within the EIA Scoping Direction, it was also recommended that consideration should be given within the LVIA to:

- The key qualities of this particular area of the Wentlooge Levels, including the assessment of ‘Tranquillity;’
- The mapping and conservation of small-scale vernacular structures e.g. railings, stone walling and stone bridges;
- Mitigation measures to respect both the SSSI designation and the landscape character of the area;
- The planted character of the site and context should be researched. New tree and hedge planting may not be appropriate in a more open landscape where many field ditches are filled with reeds rather than bordered by hedges;
- When looking at mitigation the scope for restoration of historic field boundaries should be explored, as the site has lost a number of field boundaries resulting in large field size. In this location historic fields tended to be bounded by a mix of reens and hedges;
- Opportunities for Green Infrastructure (GI) enhancement including opportunities to restore and enhance traditional habitat and landscape management character, improve rights of way for walking and cycling, and to tackle widespread fly-tipping;
- All sensitive landscape designations;
- Views into and out of the area can be long distance and panoramic along the coastline, across the Severn Estuary, and inland. The ZTV will confirm where views from the elevated sea wall (the Wales Coast Path) are possible;
- Longer distance views from elevated land to the north of the M4 as large scale development across the flat open Gwent Levels is often highly visible; and
- That as far as is practical, all elements of the scheme are included in visualisations.

METHODOLOGY

- 8.23 The LVIA is carried out by experienced chartered landscape architects. They apply professional judgements in a structured and consistent way, following the guidelines produced by the relevant professional bodies concerned with landscape and visual impact assessment.
- 8.24 These guidelines are identified in **Appendix 8-1**.
- 8.25 In line with the *Guidelines for Landscape and Visual Impact Assessment*¹ (GLVIA), the primary guidance in respect of LVIA, the methodology used for this assessment has three iterative key stages, as follows:
- **Existing conditions (or baseline assessment)** – this includes the gathering and description of information to inform the LVIA, including information on other operational projects within the study area;
 - **Design** – this includes input into the design at key stages including defining the site boundary and extent of development, identification of opportunities and constraints, review of initial design layout, discussion and recommendation of mitigation measures; and
 - **Assessment of Impacts and Effects** – this includes an assessment of the potential landscape and visual effects of the proposed development, including any residual effects following the growth of landscape mitigation measures and any cumulative effects.

The Study Areas

- 8.26 The ‘main’ study area is 5km radius offset from the boundaries of the proposed development.
- 8.27 In addition, different study areas for the five aspect areas of LANDMAP are also considered as follows:
- Visual and Sensory – 5km radius offset from the boundaries of the proposed development;
 - Historic Landscape – 5km radius offset from the boundaries of the proposed development;
 - Cultural Landscape – 2.5km radius offset from the boundaries of the proposed development;
 - Geological Landscape – 2.5km radius offset from the boundaries of the proposed development; and
 - Landscape Habitats – 2.5km radius offset from the boundaries of the proposed development.

¹ *Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition, 2013, The Landscape Institute and the Institute of Environmental Management and Assessment*

Existing Conditions Assessment Methodology

- 8.28 The description of the existing conditions establishes the baseline situation against which the effects of the proposed development are assessed.
- 8.29 The description of the baseline conditions includes:
- **Site description** – which is the description of the proposed development site, the boundaries and the immediate surrounds;
 - **Landscape relevant designations** – which is the description of areas or features recognised for their landscape value, at a national, regional and local scale. These help inform the sensitivity and importance, attributed by the national and local government, to areas or features within the proposed development site and study area;
 - **Landscape character** - which is the description of the physical characteristics of the landscape and their sensitivity to change. The landscape is divided into discrete areas of similar characteristics called ‘landscape character areas.’ Reference is made to previously published landscape character assessments at a national and local scale, including LANDMAP²; and
 - **Visual amenity receptors** – which is the identification of people and a description of their views. Views from settlements including towns, villages, hamlets and individual residential properties and farms, national cycle routes, recreational routes, open access areas, local public rights of way, bridleways and cycleways, major and minor roads and railway lines are assessed. The sensitivity of the visual amenity receptors is also described.
- 8.30 Existing information is collected through a combination of desk studies, site surveys and consultation.

Desk Study

- 8.31 An initial desk study was undertaken to review existing map and written data, relevant to the study area. Details of sources of information are found in **Appendix 8-1**. A summary of the desk study is outlined below:
- Internet search and review of relevant development plans for policies and designations to gain an understanding of the ‘importance,’ ‘value’ and ‘sensitivity’ of designated features attributed to the landscape and visual resource by the national and local government;
 - Previously published landscape character assessments at a national and local scale to gain an understanding of the overall character, quality and sensitivity of the existing landscape within the study area;

² LANDMAP website (www.naturalresources.wales)

- Maps and internet data to gain an understanding of the landform and landscape pattern as well as for information on location of public rights of way and visitor attractions; and
- Internet data to find information on operational, under construction, consented and pending planning solar schemes. The information is constantly changing and was last updated at the beginning of April 2020.

Site Survey

- 8.32 A site survey, including a photographic survey, was undertaken in fine weather in March and April 2019 by an experienced chartered landscape architect. A further site survey was undertaken in July 2020.
- 8.33 The proposed development site was visited and the survey within the study area was undertaken from selected publicly accessible areas, such as public highways and public rights of way. Views from private properties, such as houses and settlements, were estimated from the closest publicly accessible location and checked using aerial photography.
- 8.34 The site survey helped to gain an understanding of the existing landscape character and visual amenity receptors and their views within the study area and the potential impacts and effects as a result of the proposed development.
- 8.35 The site survey also helped to inform the proposed development design including defining the layout and extent and identifying mitigation measures to reduce any potential effects. This supplemented the available information collected during the desk study.

Landscape Character and Visual Amenity Receptor Sensitivity Methodology

- 8.36 Landscape character and visual amenity receptors are assessed according to their sensitivity to change by combining the considerations of susceptibility and value.
- 8.37 The sensitivity of both landscape character and visual amenity receptors are evaluated according to a five-point scale. The criteria used to assess the sensitivity of landscape character and visual amenity receptors are outlined in **Table 8.1**. The susceptibility to change referred to relates specifically to the proposed development.

Table 8-1 Broad criteria for assessing the sensitivity of landscape and visual receptors

Sensitivity	Landscape character description	Visual amenity receptor description
High	<p>Distinctive landscape elements and/or character, with very limited ability to accommodate change.</p> <p>Includes areas with a very strong positive character with valued features that combine to give an experience of unity, richness and harmony.</p> <p>Landscapes in excellent condition that are considered to be of particular importance to conserve and which may be particularly sensitive to the proposed development. No detractors present.</p> <p>Likely to be designated and <u>could</u> include very highly valued landscapes of strong scenic quality and rarity on a national/international scale (World Heritage Sites, National Parks/Areas of Outstanding Natural Beauty).</p> <p>Broadly comparable to the LANDMAP defined 'outstanding' category.</p>	<p>Residents of residential properties and settlements (ground floor – where it is assumed this is the 'main' living area, including gardens).</p> <p>Users of public rights of way/open access land in nationally/internationally designated areas of landscape value (World Heritage Sites, National Parks/Areas of Outstanding Natural Beauty).</p> <p>Users of national trails.</p> <p>Visitors to valued viewpoints (for example promoted or well-known viewpoints, key designed views or panoramic viewpoints marked on maps).</p>
Medium-high	<p>Highly valued landscape elements and/or character with limited ability to accommodate change.</p> <p>These are landscapes in very good condition that are considered to be of importance to conserve and which may be sensitive to the proposed development. No or few detractors present.</p> <p>Likely to be designated and <u>could</u> include valued landscapes of scenic quality and rarity on a regional or local scale (SLAs, designed landscapes).</p> <p>Broadly comparable to the LANDMAP defined 'high' category.</p>	<p>Residents of residential properties and settlements (first floor – where it is assumed these are bedrooms/bathrooms – not the main living area).</p> <p>Users of public rights of way/open access areas which <u>could</u> be locally recognised (for example SLAs) or in locations where the users are likely to pause to appreciate the view, such as at benches, key views to/from local landmarks.</p> <p>Users of outdoor recreational facilities with high interest in surrounding environment including visitors to attractions or heritage assets.</p> <p>Users of recognised cycle routes and recreational routes.</p> <p>Travellers along identified scenic road routes.</p>
Medium	<p>Moderately valued or 'everyday' landscape elements and/or landscape character, with some ability to accommodate change.</p> <p>These are landscapes in good condition which <u>could</u> be appreciated by the community but has little or no wider recognition.</p> <p>Some detractors likely to be present.</p> <p>Broadly comparable to the LANDMAP defined 'moderate' category.</p>	<p>Users of public rights of way/open access land.</p> <p>Recreational users travelling at low speeds on bridleways/cycle paths.</p> <p>Visitors to cemeteries.</p> <p>Visitors staying at a caravan/camping sites.</p> <p>Outdoor sporting facilities and users of recreational facilities with low interest in surrounding environment.</p>
Medium-low	<p>Reasonably valued landscape elements and/or landscape character, with good ability to accommodate change.</p> <p><u>Could</u> include features/areas that exhibit positive character but which may have evidence of alteration, degradation and erosion of features resulting in areas of more mixed character.</p> <p>Some detractors likely to be present.</p> <p>Broadly comparable to the LANDMAP defined 'low' category.</p>	<p>Travelers along most minor roads.</p> <p>Outdoor sporting facilities and users of recreational facilities with low interest in surrounding environment.</p>
Low	<p>Weak landscape structure, partly degraded with frequent detractors with very good/substantial ability to accommodate change.</p> <p>Highly likely to be a non-designated landscape in poor condition which <u>could</u> include elements and/or areas that are generally negative in character with few, if any, valued features.</p>	<p>Static office workers and workers in industrial facilities/indoor non-static environments.</p> <p>Travellers with limited opportunity to enjoy the view due to speed of travel (for example on motorways, trunk roads or rail routes).</p>

Design Methodology

- 8.38 A leading role was played by the chartered landscape architect in informing the design during the assessment process, including informing the extent of the site, site layout and development design as well as determining the landscape mitigation measures.
- 8.39 During the assessment process and as a result of the site survey, fields to the south of the site were removed from the development design, mainly for ecological reasons, to incorporate habitats for ground nesting birds. The proposed development will also be removed further away from the minor road (Green Street), scattered with residential properties to the south, with associated positive effects on these visual amenity receptors.
- 8.40 This resulted in the final design being more logical and compact, less ‘visible’ and better integrated into the immediate and wider landscape.

Assessment of Impacts and Effects Methodology

- 8.41 The existing conditions descriptions and the determination of sensitivity help to assess the magnitude of impact and level of effect, including their significance, on the landscape character and visual amenity receptors as a result of the proposed development.

Magnitude of Impact Methodology

- 8.42 An ‘impact’ is defined as a change likely to occur as a result of the construction, operation and de-commissioning of the proposed development.
- 8.43 The scale or magnitude of impact is determined through the assessment of the duration and extent of the changes to the landscape and visual resource as a result of the proposed development.
- 8.44 The duration of impact determines the time period over which the changes as a result of the proposed development occurs. Most impacts as a result of the proposed development would be long-term, however medium or short-term impacts may be identified where mitigation such as planting is proposed. For example, it is expected that the maturing of existing and/or proposed planting will screen views over time. In addition, the construction impacts will also be short-term.
- 8.45 The extent of the impact indicates the geographic area over which the changes as a result of the proposed development occur. The extent of the impacts could be limited (for example, only a small part of the site or view); localised; intermediate or wide.
- 8.46 The magnitude of impact on both landscape character and visual amenity receptors are evaluated according to a six-point scale. The broad criteria for assessing the magnitude of impacts are outlined in **Table 8.2**.

Table 8.2 Broad criteria for assessing the magnitude of impact on landscape character and visual amenity receptors

Magnitude of impact	Landscape character description	Visual amenity receptor description
High	<p>High levels of change to landscape elements/landscape character.</p> <p>The proposed development will be very prominent in the landscape and will be perceived as a determining factor of the landscape character.</p> <p>The proposed development will lead to a major alteration to the landscape character.</p> <p>The proposed development, when perceived with other solar schemes, will be immediately apparent and contribute to a 'landscape with solar schemes.'</p>	<p>Receptors would experience an immediately apparent change to their views, arising from major alteration to the key characteristics of the existing view or the introduction of elements that will be totally uncharacteristic of the view.</p> <p>The proposed development will dominate the field of view and be impossible not to notice.</p> <p>The proposed development, when perceived with other solar schemes, would be immediately apparent and contribute to a view dominated by solar schemes.</p>
Medium-high	<p>Prominent level of change to landscape elements/landscape character.</p> <p>The proposed development will be obvious in the landscape and will generally be perceived as a determining factor in local landscape character.</p> <p>The proposed development, when perceived with other solar schemes, would be obvious and contribute to a 'landscape with solar schemes.'</p>	<p>Receptors would experience an apparent change to their views.</p> <p>The proposed development would be prominent in views or would be perceived as the determining factor within the field of view and be difficult not to notice.</p> <p>The proposed development, when perceived with other solar schemes, would be obvious and contribute to a view influenced by solar schemes.</p>
Medium	<p>Partial levels of change to landscape elements/landscape character.</p> <p>The proposed development will be noticeable but not necessarily a determining factor of the landscape character.</p> <p>The proposed development would lead to a change to the landscape character.</p> <p>The proposed development, when perceived with other solar schemes, would be apparent and contribute to a 'landscape with solar schemes.'</p>	<p>Receptors would experience a readily apparent change to their view, arising from partial alteration to the key characteristics of the existing view or the introduction of elements that may be prominent but will not dominate the field of view.</p> <p>The proposed development, when perceived with other solar schemes, would be apparent and contribute to a view influenced by solar schemes.</p>
Medium-low	<p>Minor levels of change to landscape elements/landscape character.</p> <p>The proposed development will be perceived but will not be a determining factor of the landscape character.</p> <p>The proposed development, when perceived with other solar schemes, would be noticeable and may contribute to a 'landscape with solar schemes.'</p>	<p>Receptors would experience an apparent but minor change in their view, arising from an alteration to the view.</p> <p>The proposed development will be present in views but will form only a minor element.</p> <p>The proposed development, when perceived with other solar schemes, would be noticeable and may contribute to a view influenced by solar schemes.</p>
Low	<p>Low levels of change to landscape elements/landscape character.</p> <p>The proposed development will be present and will be perceived as a background feature of the wider landscape character.</p> <p>The proposed development would lead to a minor change to the landscape character.</p> <p>The proposed development, when perceived with other solar schemes, will not be immediately noticeable, although it may contribute to a 'landscape with solar schemes.'</p>	<p>Receptors would experience a low level of change to views. The proposed development will be present in the wider landscape but will be perceived as a background component of views and easily go unnoticed.</p> <p>The proposed development would lead to a minor change to the view.</p> <p>The proposed development, when perceived with other solar schemes, will not be immediately noticeable, although it may contribute to a view with solar schemes.</p>
No change	<p>Indiscernible level of change. Equivalent to no change.</p>	<p>Indiscernible level of change. Equivalent to no change.</p>

Level of Effect Methodology

- 8.47 An ‘effect’ is defined as the degree of change likely to occur as a result of the construction, operation and de-commissioning of the proposed development.
- 8.48 The level of the effects on landscape character and visual amenity receptors is determined by balancing the sensitivity of the receptor and the magnitude of impact as a result of the construction, operation and de-commissioning of the proposed development.
- 8.49 The correlation between the sensitivity of the landscape character and visual amenity receptor, and the magnitude of impact to determine the level of effect is summarised in **Table 8.3**. The matrix is however not a prescriptive tool and the analysis of the level of effects requires the exercise of professional judgement.

Table 8.3 Overall determination of level of effect on landscape character and visual amenity receptors

		Sensitivity of receptor				
		High	Medium-high	Medium	Medium-low	Low
Magnitude of impact	High	Major	Major or Moderate	Moderate	Moderate or Minor	Minor
	Medium-high	Major or Moderate	Moderate	Moderate	Moderate or Minor	Minor
	Medium	Moderate	Moderate	Moderate	Minor	Minor or Negligible
	Medium-low	Moderate or Minor	Minor	Minor	Minor or Negligible	Negligible
	Low	Minor	Minor or Negligible	Minor or Negligible	Negligible	Negligible
	No change	Neutral	Neutral	Neutral	Neutral	Neutral

- 8.50 The level of effect on both landscape character and visual amenity receptors are evaluated according to a five-point scale. The broad criteria for assessing the level of effect are outlined in **Table 8.4**.

Table 8.4 Broad criteria for assessing the level of effect on landscape character and visual amenity receptors

Level of effect	Landscape character description	Visual amenity receptor description
Major	Where the proposed development would be highly noticeable and/or noticeably alter a recognised landscape or landscape feature; the proposed development would be the defining element within the landscape.	Where the proposed development would be uncharacteristic or would substantially alter a valued/ very important view or view of high quality.
Moderate	Where the proposed development would be noticeable and/or partially alter a recognised landscape or landscape feature.	Where the proposed development would be readily apparent within the existing view.
Minor	Where the proposed development would have a discernible but limited effect on the landscape character and/or landscape elements.	Where the proposed development would be noticeable with the existing view.
Negligible	Where the proposed development would have a slightly discernible effect on the landscape character and/or landscape elements.	Where the proposed development would provide a small change to the existing view.
Neutral	The proposed development would have no change.	The proposed development would have no change.

Significance of Effects

- 8.51 ‘Major’ effects are determined as ‘significant’ with reference to the EIA Directive and UK Regulations.
- 8.52 ‘Moderate’ effects are determined as ‘potentially significant’ with reference to the EIA Directive and UK Regulations.

Positive, Negative and Neutral Effects

- 8.53 It is important to note that effects can be positive (beneficial), negative (adverse) or no change (neutral). The definitions are outlined in **Table 8.5**.

Table 8.5 Broad criteria for assessing the beneficial, adverse and neutral effects on landscape character and visual amenity receptors

Level of effect	Landscape character description	Visual amenity receptor description
Beneficial	Improvement to landscape elements and/or features. Improvement to the value of landscape character and resource. This could also include removal of existing detractors of the landscape character.	Introducing elements that improve the view. This could also include removal of existing detractors to the view.
Adverse	Removal of landscape elements and/or features. Degradation of landscape character and resource.	Introducing elements that degrade the view.
Neutral	Changes to landscape character or landscape elements that would be neither positive nor negative. Could include the addition of elements within the landscape that already exist which would not involve the degradation or removal of valued aspects of the landscape resource.	Changes to views that would be neither positive nor negative. Could include the addition of elements within the view that already exists which would not involve the degradation or removal of valued aspects of the view.

Cumulative Assessment Methodology

- 8.54 Cumulative assessment is concerned with the ‘additional’ effects of the proposed development when perceived with other consented or pending planning projects.
- 8.55 Within the cumulative assessment, the proposed development is considered ‘in addition’ to:
- Under construction and consented projects in the study area, where they already exist or are highly likely to exist; and
 - ‘Pending planning’ solar schemes within the study area, where there is only the potential that they will exist.
- 8.56 The cumulative assessment considers the additional impacts and effects on landscape character, landscape relevant designations and visual amenity receptors and their views.
- 8.57 In relation to visual amenity receptors, there are two types of impact. These include:
- Combined impacts which occur when the receptor is able to perceive two or more developments from one viewpoint, in combination or in succession; and
 - Sequential impacts which occur when the receptor has to move to another viewpoint to see different solar developments, travelling along regularly used routes such as major roads or popular or recognised public rights of way.

BASELINE

- 8.58 The description of existing or baseline conditions establishes the landscape character and visual amenity context within the study area and forms the basis of the LVIA.
- 8.59 The existing conditions include descriptions of the proposed development site and its immediate surrounds and landscape relevant designations, landscape character and visual amenity receptors and their views within the study area.
- 8.60 The existing condition descriptions also help to inform the future design of the site, including ensuring the proposed development retains a ‘sense of place’ and is in keeping with the key characteristics of the overall landscape and in views.

The Proposed Development Site and Surrounds

- 8.61 An analysis of the proposed development site and immediate surrounds is illustrated in **Figure 8.1**, with panoramic photographs of the site and immediate surrounds illustrated in **Figures 8.2A-8.2F**. The proposed development site is also described in more detail below.
- 8.62 The proposed development site is situated on large, regular flat to very gently sloping fields, set within a wider well-vegetated agricultural levels landscape.

- 8.63 The large, regular fields are divided by linear tree belts and hedgerows which are occasionally scattered with mature trees. These vegetative boundaries often line ditches which can be overgrown. Bridges cross the ditches and connect the network of fields.
- 8.64 Lines of pylons also cross the proposed development site, broadly from east to west, forming prominent vertical elements in the landscape. Scattered operational wind turbines are also perceived, their movement providing dynamic elements to the landscape.
- 8.65 There is no public access to the proposed development site although public rights of way cross the wider regular farmland, including immediately to the east and west, broadly running from north to south.
- 8.66 The public right of way to the east follows a raised embankment and track. Open views are possible across the adjacent surrounding fields on either side of the public right of way, only occasionally restricted by surrounding vegetation. Wider views from the public right of way are however limited by vegetation lining the surrounding fields, although views of the pylons and scattered wind turbines are prominent.
- 8.67 The public right of way to the west in contrast is largely enclosed by dense linear vegetation on both sides, restricting the majority of views into the surrounding landscape. Glimpsed views are however possible from the few gaps in this enclosure as well as during the winter months.
- 8.68 Numerous large-scale industrial buildings associated with the steel works, brewery and Tesco distribution centre are also visible broadly to the north, set against a backdrop of wooded rising landform.

Landscape Character

Landscape Relevant Designations

- 8.69 The proposed development site is within the Caldicot Levels Special Landscape Area (SLA) (SP8 v). The Caldicot Levels SLA surrounds the proposed development site and extends to the south towards the coast and westwards towards the fringes of Newport.
- 8.70 The Caldicot Levels SLA is described by NCC³ as a unique area of landscape consisting of reclaimed marsh and wetlands which extends from Cardiff to Chepstow. The area is characterised by its network of drainage ditches (reens) which vary in form and character. The main lines of vegetation follow the drainage ditches and these vary from no vegetation through to reeds and scrub to strong lines of trees of primarily willow and oak. The main visual detractors to the SLA

³ Newport City Council, Designation of Special Landscape Areas, June 2009

are the interface with the Llanwern Steelworks on its northern boundary and the cluster of overhead lines that cross the SLA.

- 8.71 The Caldicot Levels SLA is influenced by lines of pylons, a consented solar scheme and scattered wind energy schemes.
- 8.72 SLAs have been designated at a local level to protect areas of fine landscape quality.
- 8.73 SLAs have been recognised by Newport City Council (NCC) in Policy SP8⁴ where “proposals will be required to contribute positively to the area through high quality design, materials and management schemes that demonstrate a clear appreciation of the area’s special features.”
- 8.74 In addition, within SLAs “priority will be given to landscape conservation and enhancement. The designation of a SLA does not preclude development but any proposals must demonstrate that they have been designed to respect the valued characteristics of the recognised landscape...Developers will be required to ensure that proposals do not impact or affect the intrinsic character, quality, feature or conservation value of the SLA. Designs will be required to be of a high standard, appropriate in scale and massing, integrated sympathetically into the landscape as well as ensuring long term management.”
- 8.75 In addition, the Wentwood SLA occurs to the north of the proposed development site, on the fringes of the study area, within the hills and ridges that rise above the coastal fringes.
- 8.76 The Wentwood SLA is described by NCC as a major ridge and wider landscape feature that rises up from and contains the Usk Valley. It is covered with extensive plantations and woodlands, primarily under the management of the Forestry Commission.
- 8.77 The proposed development site is also within the Gwent Levels Landscape of Historic Interest, which extends along the coastal fringes across the study area broadly from the east to the west.
- 8.78 Landscapes of Historic Interest are protected by NCC in Policy CE4 where they “should be protected, conserved, enhanced and where appropriate, restored. Attention will also be given to their setting.”
- 8.79 The Gwent Levels Landscape of Historic Interest is recognised as an area uniquely rich in archaeological and historical resource. It consists of an extensive low lying area of estuarine alluvium located on the north side of the Severn Estuary between Cardiff and the River Rhydney to the west and Chepstow on the River Wye to the east. The levels are a landscape of diverse environmental and archaeological potential. Having been reclaimed from the sea at various times during the historic period, the present land surface is a supreme example of a 'hand-crafted'

⁴ Newport City Council, Newport Local Development Plan, 2011-26, Adopted, January 2015

landscape, artificially created and entirely the work of man, preserving clear evidence of distinctive patterns of settlement, enclosure and drainage systems from successive periods of use. There is also a proven, and possibly quite vast, potential for extensive, buried, waterlogged, archaeological and environmental deposits belonging to earlier landscapes. The levels are therefore a uniquely rich archaeological and historical resource in Wales and certainly of international importance and significance.

8.80 There are also other landscape relevant designations within the study area. These are identified on **Figure 8.4** and are described below⁵:

- There are two Registered Parks and Gardens in the study area, generally focused within the undulating farmland and hills and ridges landscape broadly to the north of the study area.
 - Pencoed Castle, Grade I, is approximately 3km to the north of the proposed development site. It consists of an earthwork remains of Tudor garden terrace, walled garden enclosures of various dates; and
 - Llanwern Park, Grade II, is approximately 3.6km to the north-west of the proposed development site. It is a small, late eighteenth to nineteenth century parkland landscape, previously focussed on Llanwern House, with its associated stables, outbuildings and courtyards (now demolished and replaced with a more modern bungalow and agricultural buildings). The majority of the mature parkland trees have also been felled, although a number still retain to enhance the overall well-vegetated character of the undulating valley landscape.

Registered Parks and Gardens are protected by NCC in Policy CE4 where they “*should be protected, conserved, enhanced and where appropriate, restored. Attention will also be given to their setting.*” The designation does not preclude development but helps to protect the site’s essential setting and significant views which are important considerations in ensuring that the historic and visual characteristics of the historic parks and gardens are conserved.

- There are three Conservation Areas present within the study area. Conservation Areas have been designated in localities where there is a special architectural or historic interest, or a character or appearance which the Council seeks to preserve or enhance.

The Conservation Areas include:

- Redwick, approximately 150m to the south;

⁵ The LVIA considers historic landscape designations in terms of their role in defining landscape character, such as Conservation Areas and Registered Parks and Gardens and the potential impacts and effects on their setting are considered from a landscape and visual perspective only

- Magor, approximately 8.75km to the north; and
- Rogiet, approximately 2.9km to the north-east.

Conservation Areas are protected by NCC in Policy CE7 where “development within or adjacent to Conservation Areas will be required to...be designed to preserve or enhance the character or appearance of the Conservation Area...[and] avoid adverse impact on any significant views, within, towards and outwards from the Conservation Area.”

- Conservation Areas are also protected by Monmouthshire County Council (MCC) in Policy HE1⁶ where development proposals should “preserve or enhance the character and appearance of the area and its landscape setting [and] have no serious adverse effect on significant views into and out of the Conservation Area.”
- Ancient Woodlands are scattered throughout the study area, largely focused within the undulating ridges and hills broadly to the north of the study area.

There are minimal woodland areas within the levels landscape, although there is a small Ancient Woodland to the south of Wilcrick, approximately 1.7km to the north.

Ancient Woodlands are protected by NCC in Policy GP5 where development should not result in the unacceptable loss or harm to trees, woodland or hedgerows that have wildlife or amenity value.

National Landscape Character

- 8.81 The Natural Resources Wales (NRW) *Landscape Character Map for Wales*⁷ is referred to for a strategic understanding of landscape character within the study area. This outlines the wider setting for the proposed development site and provides a context for the description of local landscape character.
- 8.82 Within the study area there are two national landscape character areas.
- 8.83 The proposed development site, including the majority of the study area, extending to the fringes of the study area to the east, south and west, is within the *Gwent Levels national landscape character area* (34). To the north-east, north and north-west, extending to the fringes of the study area, is the *Wye Valley and Wentwood national landscape character area* (32).

⁶ Monmouthshire County Council Monmouthshire Local Development Plan, 2011-2021, Adopted February 2014

⁷ National Landscape Character Areas for Wales (www.naturalresources.wales)

8.84 The location and extent of the national landscape character areas are illustrated in **Figure 8.5** and their descriptions are summarised in **Table 8.6** below.

Table 8.6: National Landscape Character Areas

No.	National Landscape Character Area	Description
32	Wye Valley and Wentwood	<p>To the north-east, north and north-west of the proposed development site, extending to the fringes of the study area, this is described as:</p> <ul style="list-style-type: none"> - The deeply incised, heavily wooded lower valley of a major river and nearby associated wooded and former ancient forest landscapes; - The area is physically defined by an overlapping geology of Devonian sandstones and Carboniferous Limestone; the latter forming the dramatic gorge scenery of the lower Wye; - The meandering course of the Wye initially formed when the river flowed in an area of low relief, however, falling sea levels during the Quaternary period caused it's channel to become 'fossilised' and incised into a gorge; - Land use is mainly sheep and dairy pasture, with some cereal cropping on more fertile soils. Large conifer blocks characterise the higher ground in the west; - Fields are mainly enclosed by hedgerows, and are a combination of regular Parliamentary Enclosures on higher ground and earlier, irregular fields on slopes; - The Wye Valley woodlands which cover much of the valley sides are protected because of the diversity of native and rare tree species, making the area one of the most important sites for woodland nature conservation in Britain; - This border area has a rich archaeological heritage, including prehistoric funerary and defensive sites, the 12th century Cistercian abbey at Tintern, and remains from 16th to 19th centuries iron smelting industries; - Hamlets and villages are located in the valleys, along roads or the Wye. The principal settlements serving the area are the historic towns of Chepstow and Monmouth; - The spectacular scenery of the Wye gorge has long inspired visitors, artists and writers, including William Gilpin, the 18th century progenitor of the Picturesque movement; and - The area largely retains its rural and tranquil character, although town and settlement edge expansion detracts from this in places. Long views are afforded from the higher ground.
34	Gwent Levels	<p>Containing the proposed development site and extending to the fringes of the study area to the east, south and west, this is described as:</p> <ul style="list-style-type: none"> - Distinctive coastal levels landscape, with distinctive historic patterns of water drainage and coastal defence works; - The area is neatly divided into two by the mouth of the Usk, south of Newport – with the Wentlooge Level lying to the west and the Caldicot Level to the east; - The Levels are crossed by a network of drainage ditches known as reens. The land has been successively reclaimed from the sea and coastal marshes and is protected from the tides by a sea wall; - Fertile soils support a variety of land uses including cereal cropping, sheep grazing, dairying, lowland beef production and equestrian husbandry; - A variety of field sizes and shapes reflect different phases of reclamation and enclosure. Fields are bounded by reens, ditches, and /or hedgerows; - The area contains one of the largest areas of reclaimed wet pasture in Britain. The reens support rare aquatic plants such as hairlike pondweed and are home to a diverse range of invertebrates; - This is one of the finest examples of a 'hand crafted' landscape. Some of the drainage and reclamation works still present in today's landscape date from the Roman period, while buried under the alluvium are archaeological deposits of immense potential and spanning the prehistoric to Medieval periods; - Away from the urban fringes, the Levels are sparsely settled, with small nucleated and ribbon settlements linked by narrow roads; - The open, exposed landscape affords long views to surrounding areas and the Severn Estuary and Bristol Channel; - Steelworks, a power station and pylons stand out in the flat landscape, while disproportionately large modern factory units outside Newport are also visible for long distances; and - The Levels are under pressure from development around Newport.

Local Landscape Character - LANDMAP Aspect Areas

- 8.85 The NRW LANDMAP landscape character information is referred to for an understanding of landscape character within the study area. This outlines the setting for the proposed development within the study area.
- 8.86 The five LANDMAP aspect areas are illustrated in **Figures 8.6A-8.6E** and described in more detail below. The flat levels landform that dominates the majority of the study area, rising up to a series of hills and ridges to the north, with the Severn Estuary to the south, is illustrated in **Figure 8.7**.

Visual and Sensory

- 8.87 The location of the visual and sensory aspect areas within the study area, including their sensitivity, is illustrated in **Figure 8.6A**.
- 8.88 There are a diverse range of aspect areas within the study area, varying from low (medium-low) to outstanding (high).
- 8.89 The entire proposed development site is situated within the high (medium-high) sensitivity *Caldicot Level aspect area*. This extends to the south and west of the study area, including the settlement of Redwick and extending southwards to the tidal defences lining the Severn Estuary.
- 8.90 The *Caldicot Level aspect area* is an extensive large in scale landscape, below 10m AOD. The pattern of linear primarily rectangular fields is distinctive, some enclosed by cut or outgrown hedges or lined with willows but all bounded by ditches. A more sinuous pattern prevails to the west of Whitson Common around Goldcliff. The most distinctive feature is the drainage network including undulating fields, field ditches and reens of various sizes. These have strong reed and other marginal vegetation which contributes to the lowland character of the area. There are some other uses such as recreational facilities within the area including a permanent caravan park. Cypress has been used to screen detractors including agricultural buildings. Settlement pattern tends to be focused on a few minor roads which pass through the area. There is evidence of flytipping particularly to the north. Between the clustered settlements there is a significant amount of linear development, mostly dwellings associated with small holdings such as at Whitson Common. There are some fine farmhouses and buildings associated with the older villages including small churches which act as minor landmarks. The dispersed linear pattern of farms set back from the road at Whitson is notable. A significant number of power lines with pylons converge on the power station at Uskmouth. These dominate the landscape. There are relatively few public rights of way and accesses to the flood embankment by the Severn estuary making the area a relatively inaccessible landscape. In places, the area is open allowing extensive views although it is not possible to see the adjacent Severn Estuary because of the flood embankment. This 5m high embankment is mainly covered in maintained grass although in places rip rap with a concrete capping is used to strengthen the outward facing slope. The top of the embankment is accessible for walkers in places with stiles.

- 8.91 The *Caldicot Level aspect area* is a rare, distinctive landscape of rectangular and sinuous fieldscapes with reens, hedges and field boundary trees and attractive settlements and farmhouses with a strong sense of place. As a result it has a high (medium-high) sensitivity.
- 8.92 Immediately to the north and east of the proposed development site, extending eastwards towards Caldicot is the high (medium-high) sensitivity *Western Coastal Grasslands aspect area*.
- 8.93 This is an open and exposed landscape with long views across the Severn Estuary, whilst overlooked by the Second Severn Crossing and the settlements of Magor and Caldicot to the north. Forming part of the Caldicot Levels, it is a historic landscape of reclaimed pasture, with a variety of regular and irregular field patterns and drainage channels. Caldicot Moor, Banecroft, Whitewall and Undy Common are reflective of the enclosure of this common land, a unique landscape of neat and clean appearance. The fields of mainly improved grassland have retained their integrity, although Caldicot Moor has been degraded somewhat by the Second Severn Crossing and the intrusive lines of pylons. In contrast, the irregular piecemeal enclosures of the land immediately south of Undy through to Magor Pill have a mixture of mature overgrown treelines and low intensively trimmed hedges, creating a wilder more unkempt appearance.
- 8.94 The *Western Coastal Grasslands aspect area* is characterised by long views framed by attractive pollarded willows lining the reens with a coastal edge character. The reens, hedgerows and tree lines including pollarded willows are mostly intact although the area is spoilt to an extent by the powerlines. This is a unique landscape defined by its flat levels, historical character and fragile grasslands/reen system and as a result has a high (medium-high) sensitivity.
- 8.95 To the south, focussed along the Severn Estuary, are lined with outstanding (high) sensitivity landscapes, including *Estuary Mudflats aspect area* to the south and south-west, *Severn Estuary aspect area* to the south, *Bedwin Sands aspect area* to the south-east and *Western Saltmarsh and Mudbanks aspect area* to the east.
- 8.96 These aspect areas form an extensive area of intertidal mud bordering the Severn Estuary accommodating the second highest tidal range in the world. The area is very exposed, covered with water at high tide and forms part of the raw seascape. Relict structures exist such as posts probably relating to a former fishing use. Superb views are possible across the Severn Estuary.
- 8.97 The northern part of the study area is scattered with high (medium-high) and moderate (medium) sensitivity landscapes, with low (medium-low) sensitivity aspect areas focussed within the developed and settled areas. These form a diverse mixture of farmland, sweeping upland and exposed rough grassland and moorland landscapes, with occasional large forestry plantations, contrasting with more intimate and wooded valleys.

Historic Landscape

- 8.98 The location of the historic landscape aspect areas within the study area, including their sensitivity, is illustrated in **Figure 8.6B**.

- 8.99 There are a diverse range of aspect areas within the study area, varying from moderate (medium) to outstanding (high).
- 8.100 The northern section of the proposed development site is situated within the outstanding (high) sensitivity *Whitson aspect area*. This extends to the west and south-west of the study area.
- 8.101 The *Whitson aspect area* is an extensive hand-crafted regular landscape, having been recurrently inundated and reclaimed from the sea from the Roman period onwards. The area has distinctive patterns of settlement, enclosure and drainage systems belonging to successive periods of use, and a proven and possibly vast potential for extensive, well-preserved, buried, waterlogged and archaeological deposits surviving from earlier landscapes.
- 8.102 This extensive area represents an important, well-preserved and visually coherent example of deliberately planned landscapes of regular field enclosure, constituting land reclaimed from the sea. These are characterised by drainage features (reens, surface drainage and a system of grips) and a planned network of roads and green lanes. As a result it has an outstanding (high) sensitivity.
- 8.103 The southern section of the proposed development site is situated within the outstanding (high) sensitivity *Redwick aspect area*. This extends to the south and south-west of the study area.
- 8.104 The *Redwick aspect area* is a remarkably coherent, irregular landscape, the product of extensive wetland reclamation during the medieval period, focused on the well-preserved nucleated medieval settlement of Redwick. Recent archaeological work in this area has demonstrated exceptionally high potential for the survival of archaeological remains of all periods within the intertidal zone.
- 8.105 The outstanding (high) sensitivity aspect areas continue in a band across the levels to the east, including the *Caldicot Level aspect area* immediately to the east.
- 8.106 The *Caldicot Levels aspect area* extends across the levels towards Caldicot and is recognised as a major component of the Gwent Levels coastal plain located on the northern side of the Severn Estuary. This area of reclaimed estuarine alluvium is regarded as a cultural resource of exceptional importance.

Cultural Landscape

- 8.107 The location of the cultural landscape aspect areas within the study area, including their sensitivity, is illustrated in **Figure 8.6C**.
- 8.108 There are a diverse range of aspect areas within the study area, varying from low (medium-low) to outstanding (high).
- 8.109 The entire proposed development site is situated within the outstanding (high) sensitivity *Gwent Levels aspect area*. This extends to the south and west of the study area, including the settlement of Redwick and extending southwards to the tidal defences.

- 8.110 The *Gwent Levels aspect area* is a landscape of exceptional integrity dating back to at least the Roman period. It is principally a reclaimed, man-made landscape protected for most of its area by sea walls and criss-crossed with a subtle but practical system of drainage. Field patterns vary widely, at times the product of cultural evolution, at others to meet prevailing systems of agriculture or to respond to topographical features.
- 8.111 The *Gwent Levels aspect area* is principally located to the south of the Cardiff-London Railway. Historically, it is thought that in the earliest days the land was used largely as summer pasture before the successive engineering skills of the Romans and, later, monastic houses and Normans developed the present sophisticated methods of draining the land and preventing encroachment of the Severn Estuary waters. Settlement patterns vary between the larger (but still small) groupings on the rising back lands, single farms at the end of narrow roads (frequently running alongside reens) and small clusters of houses.
- 8.112 This area illustrates a multi-period evolved historic reclaimed landscape of exceptional integrity dating back to the Roman era. Although heavily compromised by development, it has an outstanding (high) sensitivity.

Geological Landscape

- 8.113 The location of the geological landscape aspect areas within the study area, including their sensitivity, is illustrated in **Figure 8.6D**.
- 8.114 There are a diverse range of sensitivities within the study area, varying from low (medium-low) to high (medium-high).
- 8.115 The entire proposed development site is situated within the high (medium-high) sensitivity *Caldicot Level-Goldcliff aspect area*. This extends to the south and west of the study area, including the settlement of Redwick and extending southwards to the tidal defences.
- 8.116 The *Caldicot Level-Goldcliff aspect area* is described as a major part of the extensive coastal plain which dominates southern Newport. It represents a former area of estuarine marsh and although now reclaimed and drained is not heavily industrialised or urbanised. The surface has a patchwork appearance due to a network of drainage furrows and is separated from the Severn Estuary by a seawall.
- 8.117 This area forms a key part of the Gwent Levels coastal flats and although now reclaimed for agriculture, does not have any extensive development. As a result it has a high (medium-high) sensitivity.

Landscape Habitat

- 8.118 The location of the landscape habitat aspect areas within the study area, including their sensitivity, is illustrated in **Figure 8.6E**.

- 8.119 There are a diverse range of sensitivities within the study area, varying from low (medium-low) to outstanding (high).
- 8.120 The entire proposed development site is situated within the outstanding (high) sensitivity *Mosaic aspect area*. This extends from the north to the south of the study area, including the settlement of Redwick and extending southwards to the tidal defences.
- 8.121 The *Mosaic aspect area* is described as a section of the Gwent Levels of predominantly pasture and arable mixture of square bound and long narrow fields drained by reens (ditches). The reens are rich in plant species and invertebrates. It forms part of the most extensive areas of reclaimed wet pasture in the UK. The reens are particularly important. It is rich in plant species and communities due to its variety of ditch types and their management. A number of nationally rare plant species and invertebrates are recorded. As a result, it has an outstanding (high) sensitivity.

Visual Amenity Receptors and their Views

- 8.122 An overview of the visual amenity receptors and their views within the study area is described below and the location of principal visual amenity receptors illustrated on **Figure 8.8**. Representative publicly accessible panoramic views from key visual amenity receptors are illustrated on **Figures 8.10-8.25**, their location shown on **Figures 8.9A-8.9B**.

Settlements – Towns, Villages and Hamlets

- 8.123 The scattered settlements within the study area are largely contained and enclosed. Longer distance views from the settlement fringes are often restricted by a combination of subtle variations in landform and numerous lines of mature vegetation both surrounding the settlement fringes and in the intervening landscape.
- 8.124 The closest settlements to the proposed development include:
- Redwick, approximately 150m to the south of the proposed development site at its closest point, is a compact village focussed around a pub, church and village hall, situated along a number of minor roads, within the expansive levels landscape. It is only from the fringes of the village that views over the surrounding levels landscape, including over the lines of pylons and scattered wind energy schemes are possible. As illustrated in **Viewpoint 4 (Figure 8.13A)**, even from the north-eastern fringes of the village, wider views are restricted by the hedgerow lined minor roads, mature garden vegetation and mature vegetation lining the intervening fields;
 - Magor and Undy, approximately 800m to the north of the proposed development site at their closest points are compact towns situated to the south of the M4 and bisected and bordered by the main railway line to the south. The railway line to the south of the settlement forms a strong boundary and containment to long distance views across the adjacent levels landscape although glimpsed views above this enclosure may be possible as the settlement gently rises to

the north and from selected high points, such as the railway bridge as illustrated in **Viewpoint 11 (Figure 8.20A)**;

- Llandeenny, approximately 650m to the north of the proposed development site at its closest point, is a scattered collection of houses and farms set on either side of the main railway line. Situated on slightly higher ground, wider views over the levels landscape, including towards the proposed development site, are restricted by the mature vegetation surrounding the settlement, lining the adjacent A4810, as illustrated in **Viewpoint 7 (Figure 8.16A)** and within the wider field pattern.

Scattered Residential Properties and Farms

8.125 Individual residential properties and farms are scattered throughout the study area, broadly to the south within the expansive levels landscape and to the north within the undulating and well vegetated landscape of ridges and hills.

8.126 Many of the scattered houses and farms have restricted views into the surrounding landscape. A combination of mature garden vegetation enclosing many properties, screening provided by adjacent development as well as subtle variations in landform and mature hedgerow, trees and woodland vegetation in the immediate and wider landscape, including lining the adjacent road corridors, screens the majority of views.

8.127 The closest residential properties and farms to the proposed development site are largely scattered along the minor road network to the north, east, south and west.

- Broadly to the north, there is a mixture of single and two storey properties stretched out largely to the north of the very enclosed Bareland Street including the two storey Blue House Farm (to the south of the road) and various single and two storey properties at Barecroft Common (to the north of the road). Largely surrounded and enclosed by mature vegetation surrounding the properties, lining the minor road and in the surrounding landscape, wider views are restricted;
- Broadly to the east, there are scattered largely detached single storey and two storey properties along both sides of Whitewall Lane and Pill Street.
- To the north-east, along Whitewall Lane, the scattered residential properties are largely set within and enclosed by large well-vegetated gardens on both sides of the minor road as well as the mature vegetation enclosing Whitewall Lane (for the properties to the east of the minor road).
- However, this enclosure along the road lessens to the south and as illustrated in **Viewpoint 9 (Figure 8.18A)**, views are possible above this vegetative enclosure over the wider levels landscape enclosed by lines of mature vegetation, crossed and heavily influenced by the numerous lines of pylons. The scattered residential properties, focussed to the west of the road however, appear to be very well-enclosed by surrounding garden vegetation, including lining the road boundary.

- It is only for the semi-detached properties, near to Pill Farm, 1 and 2 Lower Grange Cottages, that occur to the west of the minor road that more expansive views across the adjacent levels landscape are possible.
- To the south-east, along Pill Street, the scattered residential properties are largely set within and enclosed by large well-vegetated gardens as well as the mature vegetation enclosing the minor road. For the small cluster of houses adjacent to Summerleaze Farm, the surrounding mature vegetation, including lining the southern extent of the public right of way running along Black Wall Lane helps to restrict wider views into the surrounding levels landscape.
- Lower Grange Farm also occurs within the levels landscape to the east. It appears that the residential property is set to the east of the complex of large-scale agricultural buildings associated with the farm, and is orientated southwards, very effectively restricting views to the west, including towards the proposed development site.
- Broadly to the south, there are scattered detached properties along Green Street largely focussed to the south of and enclosed by the mature vegetation lining the minor road, with associated restricted views northwards.
- To the north of the minor road, there are a couple of detached houses associated with Redwick House, including The Stables. Set back from the minor road, they appear to be well-enclosed by surrounding mature garden vegetation.
- Near to the junction with North Row, as illustrated in **Viewpoint 4 (Figure 8.13A)**, a small cluster of detached houses, including The Rowans and a converted chapel, appear to be partially enclosed by surrounding mature vegetation. Views northwards into the adjacent fields appear to be possible, although long distance views are restricted by the mature lines of vegetation separating the fields.
- There are properties along Longlands Lane to the south-west as illustrated in **Viewpoint 2 (Figure 8.11A)**. Little Longlands is a detached two storey property which is orientated to the south-east and appears to be well-enclosed by trees although views of pylons and scattered wind energy schemes are possible. There are also two detached properties in Longlands. These are orientated to the south-west, with farm buildings to the north. Oblique views above the single storey farm buildings are possible over the surrounding levels landscape, particularly from the upper stories, including towards the lines of pylons and scattered wind energy schemes.
- There are scattered properties along North Row to the west. The scattered residential properties are largely set within and enclosed by large well-vegetated gardens and surrounding farm buildings as well as the mature vegetation enclosing North Row (for the properties to the west of the minor road). Selected views are however possible above and amidst this vegetative enclosure over the wider levels landscape enclosed by numerous lines of mature vegetation, crossed and heavily influenced by the numerous lines of pylons
- Tonew Kennels also occurs to the west accessed via a track off the crossroads with North Row and Cock Street. This two storey detached property faces onto the farm and access track to the north, with single storey kennels situated to the east restricting views from the ground floor. Views are possible across the surrounding levels landscape including towards the scattered

wind energy schemes and the lines of pylons that occur immediately to the north and south of the property. Views over the adjacent large industrial buildings lining the A4810 are also prominent.

National Cycle Routes

- 8.128 National Cycle Route (NCR) 4: Celtic Trail crosses the study area from east to west, generally following minor roads and lanes across the levels landscape, approximately 70m to the south-west of the proposed development site at its closest point.
- 8.129 Largely following straight minor roads and lanes, as illustrated in **Viewpoint 4 (Figure 8.13A)**, the dense vegetative enclosure along the road network, as well as lining the intervening fields restricts the majority of wider views. However, as illustrated in **Viewpoint 8 (Figure 8.17A)**, occasional expansive views are possible across the adjacent levels landscape, above the immediate vegetative enclosure. Views are selectively possible across the trimmed hedgerow surrounding the route over the regular landscape bisected by hedgerows and trees, including towards the lines of pylons and scattered wind energy schemes.
- 8.130 Selected open views are also possible from gaps in the vegetative enclosure such as field gates or from selected elevated locations such as bridges. Views of the pylons, large industrial buildings and the fringes of settlement as well as the scattered operational wind energy schemes focussed within the levels landscape are possible including towards the distant hills broadly to the north. However as illustrated in **Viewpoint 15 (Figure 8.24A)**, even from an elevated bridge, wider views are restricted by intervening mature vegetation.

Recreational Routes

- 8.131 The Wales Coast Path recreational route follows the coastal fringes, broadly from the east to the west of the study area. Largely following the elevated coastal sea defenses, approximately 1km to the south of the proposed development site at its closest point, exposed and expansive views are possible across the adjacent levels landscape, including towards the distant hills broadly to the north.
- 8.132 From these elevated locations along the sea defenses, as illustrated in **Viewpoint 12 (Figure 8.21A)** and **Viewpoint 16 (Figure 8.25A)**, views of pylons, large industrial buildings associated with the steel works and the fringes of Newport as well as scattered operational wind turbines focused within the levels landscape and viewed against a background of rising hills are possible.
- 8.133 Even when the recreational route branches inland to the east, it is largely enclosed by a combination of development, sloping landform and mature vegetation. It is only from high points, as illustrated in **Viewpoint 15 (Figure 8.24A)** or from gaps in the enclosure, that views into the surrounding undulating farmland landscape and lower levels landscape are possible.

Local Public Rights of Way, Bridleways and Cycleways

- 8.134 Scattered public rights of way, bridleways and cycleways cross the study area. Often following field boundaries, they are generally enclosed by a combination of hedgerow and linear tree belt vegetation which restricts many views.
- 8.135 It is only from selected high points, from gaps in the enclosing vegetation, such as at field gates or when the routes cross open fields that views across the levels landscapes broadly to the south and the undulating ridge and valley broadly to the north are possible.
- 8.136 There are a few public rights of way in close proximity to the proposed development site following tracks broadly to the east and west.
- 8.137 The public right of way immediately to the east of the proposed development site (recognised as a route with public access) runs from north to south and follows a raised embankment across the levels landscape. Intermittently lined by vegetation, selected open views are possible across the adjacent surrounding fields on either side of the public right of way, as illustrated in **Viewpoint 3 (Figure 8.12A)**. Wider views from the public right of way are however limited by vegetation lining the surrounding fields. However, as illustrated in **Viewpoint 5 (Figure 8.14A)**, views towards the proposed development site very quickly become restricted by intervening vegetation lining the surrounding regular fields.
- 8.138 In contrast, the public right of way immediately to the west of the proposed development site, (recognised as a route with public access) and running along Rush Wall Lane from north to south is largely enclosed by dense linear vegetation on both sides, restricting the majority of views into the surrounding landscape, as illustrated in **Viewpoint 6 (Figure 8.15A)**. Glimpsed views however are possible over the surrounding fields from the few gaps in this enclosure surrounding the public right of way as well as during the winter months.
- 8.139 Further afield, for the scattered public rights of way in the levels landscape the numerous lines of mature vegetation that border the regular field network help to limit many long distance views, including towards the proposed development site. Expansive views in the levels landscape are only possible from elevated locations, such as bridges, as illustrated in **Viewpoint 11 (Figure 8.20A)**, which overlooks the surrounding enclosing woodland vegetation.
- 8.140 As the landform however begins to rise broadly to the north of the study area, more expansive and elevated views are possible from the network of public rights of way that cross the agricultural and well-vegetated landscape. As illustrated in **Viewpoint 13 (Figure 8.22A)**, from a selected and open location on the slopes of Wilcrick Hill, and **Viewpoint 14 (Figure 8.23A)** from a selected open and elevated location on the agricultural slopes above Bishton, views are possible over the lower levels landscape, including towards the prominent pylons, scattered wind energy schemes and large-scale industrial buildings.
- 8.141 With distance however, the public rights of way, bridleways and cycleways that cross the undulating landscape are largely enclosed by a combination of hedgerow and woodland

vegetation which restricts many views. It is only from selected high points, from gaps in the enclosing vegetation, such as at field gates or when the routes cross the open uplands and ridges that exposed views across the surrounding landscape are possible, including towards the scattered wind energy schemes that are situated in the lower levels landscape.

Open Access Areas

- 8.142 There are very small open access areas, scattered within the levels landscape, the closest small linear strips along tracks to the south and west of Whitson approximately 2.6km to the south-west of the proposed development site at its closest point.
- 8.143 The more expansive open access areas in the study area are largely situated on elevated land within forestry plantations, focussed to the north and north-east on the elevated and well-vegetated ridges.

Major Roads, including Motorways

- 8.144 The M4 crosses the study area from the east to the west of the study area, approximately 1.7km to the north of the proposed development site at its closest point, splitting approximately 2.4km to the north-east into the M48. These busy major roads are largely enclosed by a mixture of undulating landform and significant linear vegetation enclosing their fringes. Glimpsed views are however selectively possible into the surrounding undulating and flat landscape, including distant and fleeting glimpses of the scattered wind energy schemes within the levels.
- 8.145 The closest major road to the proposed development site is the A4810 which connects to the M4 approximately 1.6km to the north at Junction 23A before heading westwards to connect with the fringes of Newport. The A4810 connects the numerous large-scale industrial buildings scattered along this busy arterial route. As illustrated in **Viewpoint 7 (Figure 8.16A)**, as the road slopes down from the motorway junction, wider views are largely restricted by intervening mature vegetation, although views of pylons are possible.
- 8.146 Passing approximately 230m to the north of the proposed development site at its closest point, the A4810 is on slight embankment as it crosses the levels landscape. As illustrated in **Viewpoint 10 (Figure 8.19A)**, occasional expansive views over the surrounding flat levels landscape are possible, although often limited by the mature vegetation and large-scale infrastructure enclosing the road. Views of numerous large-scale industrial buildings, including the Tesco Distribution Centre and the steel works, along with associated lighting columns and numerous signs, dominate the journey. Scattered wind energy schemes along the route corridor are also perceived, including adjacent to the Tesco Distribution Centre and within the levels landscape to the south of the road. Pylons cutting across the landscape are also a prominent vertical feature.
- 8.147 In addition, the A48, set within the undulating and well-vegetated landscape, crosses the fringes of the study area, approximately 4.8km to the north of the proposed development site at its closest point.

Minor ‘B’ Roads and Unclassified Roads

- 8.148 Numerous minor roads bisect the study area and are largely crossing the flat levels landscape to the south and focussed within the undulating landscape broadly to the north of the study area with associated variable views into the wider landscape, including towards the proposed development site.
- 8.149 In close proximity to the proposed development site, glimpsed views are generally only possible into the surrounding agricultural landscape from the network of enclosed minor roads from open locations, such as gateways.
- 8.150 Even when more open views are possible, such as from selected elevated locations, more distant views, including towards the proposed development site, are often restricted by subtle variations in landform and extensive intervening mature vegetation.
- 8.151 A network of generally straight minor roads surround the proposed development site to the north (Bareland Street), east (Whitewall Lane and Pill Street), south (Green Street) and west (Longlands Lane and North Row). These generally very straight roads pass through the regular levels landscape and are largely enclosed by a varied network of trimmed and overgrown hedgerows, fencing, linear tree belts and scattered development, which provide enclosure and screening to views. As illustrated in **Viewpoint 4 (Figure 8.13A)**, wider views are restricted by the mature vegetation enclosing North Row and Green Street as well as in the intervening fields.
- 8.152 Selected open views are however possible across the regular levels landscape from gaps in enclosure along the network of minor roads, including towards the numerous lines of pylons and wind energy schemes which dominate views. As illustrated in **Viewpoint 1 (Figure 8.10A)**, views are possible from a gateway and gap in enclosure along the otherwise very enclosed Green Street to the south of the proposed development site. Although views are possible across the immediately adjacent fields, wider views are restricted by the numerous lines of mature vegetation enclosing the intervening fields although views towards the pylons and rising hills to the north are prominent.
- 8.153 As illustrated in **Viewpoint 2 (Figure 8.11A)**, from an open section along Longlands Lane, open views are possible across the immediately adjacent fields, including towards the scattered houses and buildings associated with Longlands Farm. Wider views are however largely restricted by the numerous lines of mature vegetation enclosing the intervening fields although views towards the pylons and rising hills to the north are possible.
- 8.154 Selected views are also possible above vegetation enclosing the minor roads. As illustrated in **Viewpoint 8 (Figure 8.17A)** from North Row to the west and in **Viewpoint 9 (Figure 8.18A)** from Whitewall Lane to the east, views across the regular landscape bisected by hedgerows and trees, including over the lines of pylons and wind energy schemes are possible above the adjacent trimmed hedgerows.

8.155 Further afield, including broadly to the north of the study area, the minor roads are largely enclosed by a combination of sloping landform, mature linear hedgerow and tree vegetation. It is only from high points, or from gaps in the enclosure, that views into the surrounding undulating farmland landscape and lower levels landscape, including towards the scattered wind energy schemes and large-scale industrial buildings, are possible.

Railway Lines

8.156 The main railway line crosses the study area broadly from the east to the west, approximately 700m to the north of the proposed development site at its closest point.

8.157 Crossing the fringes of the levels landscape in a mixture of cutting and embankment, exposed views are occasionally possible across the adjacent levels landscape, including towards the scattered wind energy schemes broadly to the south and the undulating and well-vegetated farmland broadly to the north, although views are largely enclosed by adjacent mature vegetation and development.

8.158 In close proximity to the proposed development site, immediately to the north, the railway line is very well enclosed by mature vegetation and development. As illustrated in **Viewpoint 11 (Figure 8.20A)**, from a pedestrian bridge crossing the railway line, the railway running along the fringes of the settlement of Magor is very well enclosed by mature vegetation restricting any views into the wider landscape.

THE PROPOSAL RESPONDS TO ITS UNIQUE LOCATION

Primary (embedded) mitigation

8.159 The Gwent Levels is a unique and ancient landscape designated as a Site of Special Scientific Interest (SSSI) for its ecological richness and diversity, much of which is associated with the presence of and maintenance regime associated with the drainage system which constitutes a network of ditches, referred to locally as reens.

8.160 It is recognised that physical changes as a result of a solar park development in this location, such as changes in views or ground disturbance, would result from the proposal. These changes are referred to as impacts. The design and layout of the solar park has responded to the location's value and sensitivities in order to reduce the magnitude of such impacts through primary (embedded) mitigation, as detailed within 'Responding to the Environmental Sensitivity of the Site', in paragraphs 2.41 and 2.42 of Chapter 2.

8.161 Primary (embedded) mitigation measures to help minimise the potential impacts and effects have therefore been incorporated into the distinct phases of the proposed development, including:

- During the site selection process - large, geometric fields are well suited to solar farms in terms of landscape and visual effects and the proposed development is focussed on such fields;

- Through the assessment process - by removing from the development design fields to the south, in close proximity to Green Street, mainly for ecological reasons. This resulted in the final design being more logical and compact, less 'visible' particularly when perceived from the south and better integrated into the immediate and wider landscape; and
- Through the design process – by incorporating designed in mitigation such as retention of boundary and internal vegetation and using existing access points and field gates/bridges over ditches.

8.162 Design and mitigation measures have also been informed through reference to the strategy and guidelines of the landscape as defined by the LANDMAP assessment.

8.163 The key objectives of the visual and sensory *Caldicot Level aspect area*, as defined by LANDMAP, in its recommendations and of relevance to the proposed development are:

- Replant and manage hedgerows and willows where gappy or deteriorating;
- Maintain field ditches and associated vegetation;
- Improve pedestrian access across levels;
- Carry out appropriate planting to screen detractors; and
- Prepare guidelines to conserve rural character and avoid suburbanisation.

8.164 The recommendations for the landscape habitat *Mosaic aspect area* are that the variety of the reens and their active management is extremely important in maintaining the biodiversity of the area. Maintenance of the reens in a staggered pattern to avoid becoming completely overgrown and become silted up is essential for maintaining the biodiversity of the area. The management guidelines include the immediate active management to prevent silting up of reens and careful use of fertilisers and pesticides to maintain invertebrates. Medium term management is the active management to maintain hedgerows.

8.165 The proposed development design also promotes and follows relevant policies within the NCC Local Plan, in particular Policy CE10: Renewable Energy which states that:

“Renewable energy schemes will be considered favorably, subject to there being no over-riding environmental and amenity considerations... Large scale proposals may be more appropriately located outside of the defined settlement boundary if no appropriate brownfield sites exist. The cumulative impacts of renewable energy schemes will be an important consideration.”

Mitigation through selection and siting of the proposed development

8.166 The proposed development site was selected because of the opportunities that exist to enable grid connection, whilst taking into account commercial and technical considerations.

8.167 The proposed development site is also focused on the less 'productive' farmland.

- 8.168 The flat location of the proposed development site, contained within large regular fields, as well as its enclosure by existing mature vegetation will restrict its visual profile in the immediate and wider landscape and will help to reduce the proposed development site's visibility and wider effects on landscape character. In addition, there will be minimal 'overlooking' from close proximity sensitive vantage points (such as housing and settlements) and the potential wider visibility of the proposed development will be very limited.
- 8.169 Any buildings or structures associated with the proposed development will also be situated in locations to strike a balance between operational requirements and restricting their wider visibility and coloured light grey or dark green to minimise their influence.
- 8.170 The proposed development was also designed to minimise direct effects on landscape elements. Existing access points, including gateways and bridges over ditches, will be used where possible, thereby minimising disruption to landscape elements and pattern. The existing farm tracks within the site will be improved as required by adding additional 300mm granular material which will weather over time. Where ground disturbance occurs during construction, bare patches of earth will be vegetated and fully reinstated.
- 8.171 Existing hedgerows and trees will be retained on the boundaries and internally within the development design, where appropriate.
- 8.172 The strong hedgerow structure network, scattered with mature trees, will largely remain intact, although there will be selected removal of hedgerow vegetation to open up reens and ditches where required for ecological and biodiversity enhancement. However, the hedgerow vegetation to be retained will be conserved, enhanced and sympathetically managed to encourage species diversity and enhanced wildlife habitats. The protection and retention of the existing landscape boundary features will provide immediate screening, retain the landscape character and pattern and help reduce the effects of the proposed development.
- 8.173 The proposed development, which will be located within relatively contained fields, will also not disrupt the surrounding and established landscape regular pattern. The proposed development will 'fit' into the existing landscape pattern, not be out of scale with the character of the local landscape and will be absorbed within the wider landscape.

Secondary Mitigation

- 8.174 Landscape relevant additional mitigation measures incorporated into the proposed development design include:
- All existing retained hedgerows surrounding and within the proposed development site will be retained and enhanced, where appropriate and maintained at a minimum of 3.5m in height. Proposed native species rich 'gap' filling planting will be introduced into the existing retained vegetative structure. This will strengthen and give additional height to the existing vegetative structure, where required and reinforce the surrounding regular landscape pattern. In addition,

the reinforcement of existing hedgerow boundaries will also help to restrict views from the surrounding limited visual amenity receptors;

- Proposed planting will reflect the existing landscape character within the study area through the sensitive selection of species that will enhance the proposed development and the wider landscape. This will ensure that the proposed development complements the existing landscape. Locally sourced native tree and shrub species will include plants commonly found in the surrounding hedgerows;
- A rough grassland corridor will be managed between the proposed security fence and field boundaries which will only be intermittently and lightly grazed. This will provide nature conservation and biodiversity benefits; and
- Any gaps or areas of bare or disturbed ground in the existing grassland, following construction will be re-seeded with a species rich, shade resistant sheep grazing grassland mix, specifically for solar parks.

8.175 The landscape mitigation measures are illustrated on **Figure 8.26**.

Construction

8.176 Mitigation measures, relevant to the LVIA during the construction period, include:

- Existing access points, bridges over ditches and farm tracks will be used where possible. Access tracks for construction will largely follow existing farm tracks and utilise existing entrances. The existing farm tracks within the site will be improved as required by adding granular material which will weather over time; and
- The temporary construction compound will be located within or alongside the proposed development site minimising direct and indirect effects on landscape elements, landscape character and visual amenity receptors and their views. It should be noted that this compound is permitted development.

Operation

8.177 Mitigation measures, relevant to the LVIA during the operation period, will include:

- The existing retained hedgerows along the boundaries and within the proposed development will be maintained at a minimum of 3.5m high and of sufficient thickness and density to be stock-proof and to provide screening of the proposed development. However to enhance and maintain the health of the hedgerows within and on the boundaries of the site, allowance should be made for rotational laying of selected sections. Reference should be made to specific measures as stated in the management plan which will be implemented if permission is forthcoming;
- Ongoing hedgerow management will be relaxed with trimming once every two to three years, staggered across the site to encourage flowering and fruiting and thereby provide greater abundance of foraging resources for wildlife, including birds and invertebrates. Trimming

should be carried out in late winter to prolong habitat resources during winter but prior to the commencement of the bird nesting season; and

- Existing entrances and farm tracks will be used, thereby minimising direct effects on landscape elements.

8.178 However, it should be acknowledged that the operational effects of the proposed development will be temporary, and the potential effects of the proposed development are reversible.

De-commissioning

8.179 The proposed development will be it will be dismantled and removed and the site reinstated to previous conditions at the end of the operational period.

8.180 Mitigation measures, relevant to the LVIA during the de-commissioning period will be similar to the construction period, and will include:

- De-commissioning compound and all disturbed and excavated areas will be reinstated following completion of de-commissioning activities. Any concrete foundations (if used) will be broken up or left in situ and covered to make up levels;
- There will be limited vegetation loss;
- Existing entrances, tracks and access points will be used (including temporary access tracks where required); and
- The site will be reinstated to previous use.

CONSTRUCTION AND DE-COMMISSIONING IMPACTS AND EFFECTS

8.181 Construction activities which have the potential to temporarily affect the landscape character and views from visual amenity receptors include:

- Deliveries to site and vehicle movements on and off site, including temporary installations such as cranes used during construction;
- Installation of fencing punctuated with CCTV camera masts, solar panels, private switchgear, DNO substation and inverters; and
- Reinstatement works to areas disturbed by construction activities.

8.182 De-commissioning activities which have the potential to affect the landscape character and views from visual amenity receptors include:

- Dismantling and removal of all installed infrastructure; and
- Reinstatement works to areas disturbed by de-commissioning activities.

- 8.183 From the description of the construction and de-commissioning activities as outlined above, any effects on landscape character and visual amenity receptors and their views during the construction and de-commissioning phases will be very temporary in duration.
- 8.184 Any disruption to the fields as a result of de-commissioning activities will be re-seeded with a species rich grassland mix.
- 8.185 Therefore, the short-term, reversible and temporary nature of the construction and de-commissioning activities on both landscape character and visual amenity receptors and their views will ensure that the overall effects will be, at worst, **negligible adverse**.

ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS - OPERATIONAL IMPACTS AND EFFECTS, INCLUDING RESIDUAL IMPACTS AND EFFECTS

Overview

- 8.186 Zones of Theoretical Visibility (ZTV), as illustrated in **Figures 8.9A and 8.9B**, have been calculated to the height of the solar panels (no higher than 3.3m) and service buildings/inverter heights (no higher than 4.1m) covering the 5km radius study area.
- 8.187 The ‘bare earth’ ZTV (**Figure 8.9A**) illustrates the area of potential visibility of all of the proposed development, separated into different amounts or percentages of the extent of the proposed development potentially visible, based on landform data across the study area. The ZTV does not take into account the screening effects from local features such as subtle variations in landform, linear vegetation cover such as hedgerows, woodlands, linear tree belts and development that are key characteristics of the landscape and also offer substantial screening. Therefore, the bare earth ZTV represents the ‘worst-case’ scenario but is a starting point for assessing the operational impacts and effects of the proposed development on landscape character (including landscape relevant designations) and visual amenity receptors and their views.
- 8.188 The ‘excluded’ ZTV (**Figure 8.9B**) however takes into account the potential screening from existing buildings, assumed to be of 7m in height and woodland, assumed to be of 10m in height.
- 8.189 As illustrated on the bare earth ZTV (**Figure 8.9A**), the main extent of potential visibility is immediately surrounding the proposed development and extending over the expansive levels landscape broadly to the east and west and extending in ‘fingers’ over the rising ground to the north. The sea defences running along the estuary provides an effective screen to wider visibility to the south.
- 8.190 The excluded ZTV (**Figure 8.9B**) provides a more limited potential extent of visibility. The main extent of potential visibility is immediately surrounding the proposed development and whilst

extending over the expansive levels landscape broadly to the east and west, the potential amount or percentage of the proposed development perceived is substantially restricted. The extent of the proposed development potentially perceived in the higher ground broadly to the north is also very restricted to a number of selected high points including Wilcrick Hill to the north and the slopes above Bishton to the north-west.

- 8.191 This restricted potential extent of visibility is reflected in the selection of the viewpoints, which generally include views from very close proximity to the proposed development or from elevated views further afield broadly to the north.
- 8.192 Details on the preparation of the ZTVs, photomontages and photographic analysis to inform the LVIA are found in **Appendix 8-2**.

Viewpoint Analysis

- 8.193 Sixteen viewpoints have been selected to inform the LVIA and help determine and describe the magnitude of impact and level of effect, including their significance, of the proposed development. The viewpoints are found on **Figures 8.10-8.25**. The location of the viewpoints is illustrated on the ZTVs on **Figures 8.9A and 8.9B**.
- 8.194 The agreed viewpoints, determined through analysis of existing conditions, site survey and consultation, have been specifically sought out to represent potentially the most ‘exposed’ views of the proposed development, from the most ‘sensitive’ receptors, broadly surrounding the proposed development from all directions of view. The viewpoints therefore show a ‘worst-case’ scenario.
- 8.195 Four of the viewpoints have been interpreted into photomontages, determined through technical analysis to have the potential to perceive the proposed development. A photomontage is a computer rendered image of the proposed development superimposed onto the existing photographic view.
- 8.196 The photomontages have been produced to show the ‘worst-case’ of the operation of the proposed development immediately following the completion of construction.
- 8.197 Effects are also described in stages, immediately following the completion of construction activities and after approximately 5 years, when it is assumed that the additional landscape mitigation measures have had time to mature.
- 8.198 Analysis of **Viewpoints 1 – 16 (Figures 8.10-8.25)** is also provided in the overview of operational impacts and effects, including residual impacts and effects, on landscape character and visual amenity receptors and their views as described below.

Operational Impacts and Effects on Landscape Character, including Residual Impacts and Effects

Landscape Elements

- 8.199 There will be selected limited removal of hedgerow, tree or shrub vegetation as a result of the proposed development. This removal, conforming to the recommendations within the LANDMAP assessment, allows for the 'opening up' of one side of the largely overgrown reens for ecological and nature conservation enhancement.
- 8.200 The majority of the existing hedgerow, tree and linear tree belt vegetation within the proposed development however will be retained and enhanced with selected native infill planting where required in any gaps. This will result in **minor beneficial effects** to landscape elements.
- 8.201 The enhancement of the existing retained boundaries, including sensitive management practices and the growth of infill planting will promote a healthy and robust field boundary network which will increase selective screening of the proposed development. The retention and improvement to the existing field boundaries will also strengthen the landscape pattern, increase screening and improve biodiversity with associated **minor beneficial effects**.

Landscape Relevant Designations

- 8.202 The proposed development site is within the Caldicot Levels Special Landscape Area (SLA) (SP8 v) and will have both direct and indirect influence on this recognised landscape, designated at a local level to protect areas of fine landscape quality.
- 8.203 The SLA is already influenced by numerous lines of pylons, operational and consented wind energy schemes, directly and indirectly by the consented Llanwern solar scheme to the west and the Tesco distribution centre and Llanwern Steelworks on its northern boundary.
- 8.204 The proposed development will be informed by and respect the regular and distinctive landscape pattern of the SLA although there will be an increase in built elements. The proposed development will add additional built elements to the SLA, albeit contained within and largely enclosed by the characteristic regular network of fields, divided by reens and lines of vegetation. The presence of the proposed development within the SLA will ensure there will be direct impacts and influence on the landscape and at worst, the magnitude of impact will be **medium**, the level of effect will be **moderate adverse**.
- 8.205 However, as illustrated in **Viewpoints 1-6 (Figures 8.10-8.15)**, **Viewpoint 8 (Figure 8.17)** and **Viewpoint 12 (Figure 8.21)**, it will only be in very close proximity that the proposed development will have the potential to be perceived and indirectly influence the SLA. In addition, from the very few locations that the proposed development will be perceived within the SLA, it will always be perceived adjacent to or in combination with other built elements including pylons and wind energy schemes.
- 8.206 For the vast majority of the SLA, stretching from the eastern boundary of the proposed development to the fringes of Newport to the west, the proposed development will not influence the wider setting or integrity of the SLA. The flat levels landform, crossed by numerous lines of

vegetation will ensure that the influence of the proposed development will very quickly diminish. With distance and for the majority of the SLA (outside the site boundary), the magnitude of impact will be **no change**, the level of effect will be **neutral**.

- 8.207 Even though selectively perceived, particularly in close proximity, the proposed development will not “*impact or affect the intrinsic character, quality, feature or conservation value of the SLA.*” The proposed development has been sensitively designed to reflect the landscape pattern and will be integrated sympathetically within the landscape of the SLA.
- 8.208 The proposed mitigation measures, focussed on improvements to the reens and drainage network through sensitive management and enhancement will also “*demonstrate a clear appreciation of the area’s special features*” and “*respect the valued characteristics of the recognised landscape...*”
- 8.209 The Wentwood SLA also occurs to the north of the proposed development, on the fringes of the study area, within the hills and ridges that rise above the coastal fringes. Excluded from the ZTV, there will be no potential indirect influence on this major ridge landscape, primarily covered in extensive plantations and woodlands. The magnitude of impact will be **no change**, the level of effect will be **neutral**.
- 8.210 The proposed development is also within the Gwent Levels Landscape of Historic Interest which extends along the coastal fringes across the study area broadly from the east to the west. The proposed development will have both direct and indirect influence on this recognised ‘hand-crafted’ landscape.
- 8.211 The proposed development will be informed by and respect the regular and distinctive landscape pattern although there will be an increase in built elements within the Gwent Levels Landscape of Historic Interest, albeit contained within and largely enclosed by the characteristic regular network of fields, divided by reens and lines of vegetation. The presence of the proposed development within the Gwent Levels Landscape of Historic Interest will ensure there will be direct impacts and influence on the landscape and at worst, the magnitude of impact will be **medium**, the level of effect will be **moderate adverse**.
- 8.212 However, as illustrated in **Viewpoints 1-6 (Figures 8.10-8.15)**, **Viewpoints 8-9 (Figures 8.17-8.18)**, **Viewpoint 12 (Figure 8.21)** and **Viewpoint 16 (Figure 8.25)**, it will only be in very close proximity that the proposed development will have the potential to be perceived and indirectly influence the Gwent Levels Landscape of Historic Interest. In addition, from the very few locations that the proposed development will be perceived within the Gwent Levels Landscape of Historic Interest, it will always be perceived adjacent to or in combination with other built elements including pylons and wind energy schemes.
- 8.213 For the vast majority of the Gwent Levels Landscape of Historic Interest, the proposed development will not influence the wider setting or integrity. The flat levels landform, crossed by numerous lines of vegetation will ensure that the influence of the proposed development will very quickly diminish. With distance and for the majority of the Gwent Levels Landscape of Historic

Interest (outside the site boundary), the magnitude of impact will be **no change**, the level of effect will be **neutral**.

8.214 In addition, the focus within the development design on restoring the reens, a characteristic feature of the landscape, will also conform to NCC recommendations within the Gwent Levels Landscape of Historic Interest, with associated positive effects.

8.215 With reference to the ZTVs (**Figures 8.9A-8.9B**) and viewpoints (**Figures 8.10-8.25**), there is also the potential for indirect impacts and effects on the setting of the other landscape relevant designations in the study area, as follows:

- Llanwern Park Registered Park and Garden, approximately 3.6km to the north-west, is excluded from the ZTVs and would experience no indirect influence on its setting as a result of the proposed development. The magnitude of impact will be **no change**, the level of effect will be **neutral**.

Pencoed Castle Registered Park and Garden, approximately 3km to the north of the proposed development, has the potential to only perceive a small part of the proposed development (0-25%). Focused within the undulating farmland and hills and ridges landscape, in reality a combination of enclosure within the earthwork remains of Tudor garden terrace and walled garden combined with distance, intervening undulating landform, development and mature vegetation, would ensure there will be no indirect influence on the setting of the Registered Park and Garden as a result of the proposed development. The magnitude of impact will be **no change**, the level of effect will be **neutral**.

- The Conservation Areas at Magor, approximately 875km to the north and Rogiet, approximately 2.9km to the north-east are excluded from the ZTVs and would experience no indirect influence on their setting as a result of the proposed development. The proposed development will have no serious adverse effect on significant views into and out of the Conservation Areas. As illustrated in **Viewpoint 11 (Figure 8.20)**, even from an elevated location on the fringes of the Magor Conservation Area, any views towards the proposed development will be restricted. The magnitude of impact will be **no change**, the level of effect will be **neutral**.

It will only be the closest Conservation Area, Redwick, approximately 150m to the south, which will have the potential to be indirectly affected by the proposed development.

As illustrated in **Viewpoint 4 (Figure 8.13)** from the northern fringes of Redwick (just outside the Conservation Area), the proposed development will be screened by a combination of intervening development and mature vegetation. The proposed development will not influence the setting of the Redwick Conservation Area or affect its character or appearance. The magnitude of impact will be **no change**, the level of effect will be **neutral**.

- No Ancient Woodlands will be directly affected by the proposed development. The closest Ancient Woodland to the proposed development is approximately 1.7km to the north. The proposed development will not result in the unacceptable loss or harm to trees, woodland or hedgerows that have wildlife or amenity value. The magnitude of impact will be **no change**, the level of effect will be **neutral**.

Landscape Character Areas

- 8.216 The operation of the proposed development will introduce a new built element, including solar panels and associated buildings, perimeter fencing punctuated by CCTV camera masts and access tracks within the landscape which will potentially influence its character, albeit the development will be contained within regular and relatively enclosed fields, within a wider well-vegetated and enclosed agricultural landscape.
- 8.217 With reference to the ZTVs (**Figures 8.9A-8.9B**) and viewpoints (**Figures 8.10-8.25**), the proposed development will be potentially perceived over a very limited area, mainly immediately surrounding the proposed development and from a few selected open, distant and elevated locations as the landform broadly rises to the north. However, the flat levels landscape that is characteristic of the site and the majority of the study area, along with the strong linear hedgerow, scattered trees and linear tree belts vegetative screening, will reduce even further the potential influence the operation of the proposed development will have on the landscape within the study area.

Visual and Sensory

- 8.218 The main influence on the visual and sensory landscape will be on the high (medium-high) sensitivity aspect area in which the proposed development is situated.
- 8.219 The proposed development site is situated within the *Caldicot Level aspect area* which extends to the south and west of the study area, including the settlement of Redwick and extending southwards to the tidal defences.
- 8.220 Other than the 'footprint' of the proposed development, there will be limited impacts on the high (medium-high) sensitivity aspect area in which the proposed development will be situated. The sensitive design and layout fits in with the primarily rectangular fields, bordered by ditches which contribute to the lowland character of the area.
- 8.221 The proposed development will however introduce built elements to this distinctive landscape of rectangular and sinuous fieldscapes with reens, hedges and field boundary trees, already influenced by pylons and the consented solar scheme at Llanwern. The magnitude of impact will be **low**, the level of effect will be **minor adverse**.
- 8.222 However, the proposed development will be retained for grazing, with improved hedgerow boundaries and management of the reens, in character with the aspect area, with associated **low impacts** and **minor beneficial effects**.

- 8.223 Immediately to the north and east of the proposed development, extending eastwards towards Caldicot is the high (medium-high) sensitivity *Western Coastal Grasslands aspect area*.
- 8.224 Any indirect influence on the setting as a result of the proposed development of this open and exposed landscape of reclaimed pasture will be restricted by the vegetative enclosure in the surrounding field network. The magnitude of impact will be **no change**, the level of effect will be **neutral**.

Historic Landscape

- 8.225 The main influence on historic landscape will be on the outstanding (high) sensitivity *Whitson aspect area* which occurs to the north of the site and extends to the west and south-west of the study area and the outstanding (high) sensitivity *Redwick aspect area* which occurs to the south and extends to the south and south-west of the study area.
- 8.226 Other than the 'footprint' of the proposed development, there will be limited impacts on the outstanding (high) sensitivity aspect areas in which the proposed development will be situated. The sensitive design and layout avoids and minimises the influence on the planned reclaimed landscape that dominates the aspect areas.
- 8.227 The proposed development will however introduce built elements to these extensive landscapes. The magnitude of impact will be **low**, the level of effect will be **minor adverse**.
- 8.228 The potential for indirect influence on the outstanding (high) sensitivity aspect areas which continue in a band across the levels to the east, including the *Caldicot Level aspect area* will be minimal. The combination of flat landscape, lined by numerous lines of mature vegetation will ensure that any indirect influence on these reclaimed, coastal plains landscape will be difficult to perceive.

Cultural Landscape

- 8.229 The main influence on cultural landscape will be on the aspect area in which the proposed development is situated.
- 8.230 The proposed development is within the outstanding (high) sensitivity *Gwent Levels aspect area*. This extends to the south and west of the study area, including the settlement of Redwick and extending southwards to the tidal defences.
- 8.231 Other than the 'footprint' of the proposed development, there will be limited impacts on the *Gwent Levels aspect area*. The sensitive design and layout retains the field pattern of the reclaimed, man-made landscape, criss-crossed with a subtle and practical system of drainage.
- 8.232 The sensitive management of the reens will have **medium impacts** and **moderate beneficial effects**.

8.233 However, the proposed development will introduce built elements to this landscape, already heavily compromised by existing development. The magnitude of impact will be **low**, the level of effect will be **minor adverse**.

Geological Landscape

8.234 The main influence on geological landscape will be on the area in which the proposed development will be situated.

8.235 The entire proposed development is situated within the high (medium-high) sensitivity *Caldicot Level-Goldcliff aspect area*. This extends to the south and west of the study area, including the settlement of Redwick and extending southwards to the tidal defences.

8.236 Other than the 'footprint' of the proposed development, there will be limited impacts on the geological aspect areas. The sensitive design and layout, including construction methods, avoids and minimises the influence on the aspect area. The magnitude of impact will be **no change**, the level of effect will be **neutral**.

Landscape Habitats

8.237 The main influence on landscape habitats will be on the area in which the proposed development will be situated.

8.238 The entire proposed development is situated within the outstanding (high) sensitivity *Mosaic aspect area*. This extends from the north to the south of the study area, including the settlement of Redwick and extending southwards to the tidal defences. The *Mosaic aspect area* is predominantly pasture and arable mixture of square bound and long narrow fields drained by reens (ditches). The reens are rich in plant species and invertebrates and are particularly important.

8.239 Other than the 'footprint' of the proposed development, there will be limited impacts on the *Mosaic aspect area*. The sensitive design and layout avoids and minimises the influence on, in particular, the important reens and the site will be retained for grazing. With improved hedgerow boundaries, sensitive management of the reens and rough grassland buffers around the periphery of the site will have **medium impacts** and **moderate beneficial effects**.

8.240 However, the proposed development will introduce built elements to this largely pastoral landscape and the magnitude of impact will be **low**, the level of effect will be **minor adverse**.

Operational Impacts and Effects on Visual Amenity Receptors and their Views, including Residual Impacts and Effects

Settlements – Towns, Villages and Hamlets

8.241 Many of the settlements within the study area are excluded or largely excluded from the ZTV and would experience no potential views towards the proposed development.

- 8.242 The enclosure by subtle variations in landform, as well as mature vegetation will restrict views towards the proposed development.
- 8.243 Even when the close proximity settlements are within the ZTVs, a combination of screening on the settlement fringes by development and vegetation will restrict the majority of views towards the proposed development. Subtle variations in the surrounding landform and mature vegetation in the immediate and wider landscape will also provide enclosure and screening.
- 8.244 Redwick, approximately 150m to the south of the proposed development at its closest point, is a compact village focused around a pub, church and village hall, situated along a number of minor roads, within the expansive levels landscape. As illustrated in **Viewpoint 4 (Figure 8.13A)**, even from the fringes of the village, views towards the proposed development will be restricted by the hedgerow lined minor roads, mature garden vegetation and hedgerow and tree lined intervening fields.
- 8.245 Magor and Undy, approximately 800m to the north of the proposed development at their closest points are compact towns situated to the south of the M4 and bisected and bordered by the main railway line to the south. The vegetation lined railway line to the south of the settlement forms a strong boundary and containment to long distance views across the adjacent levels landscape, including towards the proposed development. Even from selected high points, such as the railway bridge on the fringes of Magor as illustrated in **Viewpoint 11 (Figure 8.20A)**; the proposed development will be screened by intervening mature vegetation in the immediate and wider landscape.
- 8.246 Llandeenny, approximately 650m to the north of the proposed development at its closest point, is a scattered collection of houses and farms set on either side of the main railway line. Situated on slightly higher ground, wider views over the levels landscape, including towards the proposed development will be restricted by the mature vegetation surrounding the settlement, lining the adjacent A4810, as illustrated in **Viewpoint 7 (Figure 8.16A)** and within the wider intervening field pattern.
- 8.247 In summary, the scattered settlements within the study area are largely contained and enclosed by surrounding development and mature vegetation and longer distance views from the settlement fringes, including towards the proposed development, will be restricted by a combination of subtle variations in landform and numerous lines of mature vegetation.
- 8.248 For the **high** sensitivity settlements within the study area, the magnitude of impact will be **no change**, the level of effect will be **neutral**.

Scattered Residential Properties and Farms

- 8.249 Individual residential properties and farms are scattered throughout the study area, broadly to the south within the expansive levels landscape and to the north within the undulating and well vegetated landscape of ridges and hills.

8.250 Many of the scattered houses and farms are outside the ZTVs and will have no potential views towards the proposed development. Even if within the ZTVs, the majority of the houses and farms will have restricted views towards the proposed development from a combination of vegetation enclosing many properties, screening provided by adjacent development as well as subtle variations in landform and vegetation in the immediate and wider landscape, including lining the adjacent roads and transport corridors. For the majority of **high** sensitivity individual residential properties and farms within the study area, direct visibility of the proposed development will be extremely limited and the magnitude of impact will be **no change**, the level of effect will be **neutral**.

8.251 There may be the potential for some of the closest scattered houses and farms, set within the levels landscape, to perceive the proposed development. However, largely enclosed by adjacent buildings, mature vegetation or subtle variations in landform and set within a strong well-enclosed vegetative framework, any potential views of the proposed development will not dominate.

8.252 The closest residential properties and farms to the proposed development site are largely scattered along the minor road network to the north, east, south and west and include:

- Broadly to the north, there is a mixture of single and two storey properties stretched out along both sides of the enclosed Bareland Street. Enclosed by mature vegetation surrounding the properties, lining the minor road and in the wider landscape, wider views towards the proposed development will be restricted;
- Broadly to the east, there are scattered largely detached single storey and two storey properties along both sides of Whitewall Lane and Pill Street.
- To the north-east, along Whitewall Lane, the scattered residential properties are largely set within and enclosed by large well-vegetated gardens as well as the mature vegetation enclosing Whitewall Lane (for the properties to the east of the minor road) which will restrict views towards the proposed development. Although, as illustrated in **Viewpoint 9 (Figure 8.18A)**, views will be possible above this vegetative enclosure over the wider levels landscape to the south, for the majority of the properties along Whitewall Lane, views towards the proposed development will be restricted. Even from the semi-detached 1 and 2 Lower Grange Cottages, adjacent to Pill Farm, although more expansive views over the levels landscape are possible, particularly from the first floor, views towards the proposed development will be restricted by the numerous lines of mature vegetation in the intervening flat fields. Even if distantly perceived, any views of the proposed development will not dominate the view, already influenced by pylons and wind turbines.
- To the south-east, along Pill Street, the scattered residential properties are largely set within and enclosed by large well-vegetated gardens as well as the mature vegetation enclosing the minor road.

For the small cluster of houses adjacent to Summerleaze Farm, the surrounding mature vegetation, including lining the southern extent of the public right of way running along Black

Wall Lane will restrict wider views into the surrounding levels landscape, including towards the proposed development.

- Lower Grange Farm also occurs within the levels landscape to the east. It appears that the residential property is set to the east of the complex of large-scale agricultural buildings associated with the farm, and orientated to the south, very effectively restricting any potential views to the west towards the proposed development.
- Broadly to the south, there are scattered detached properties along Green Street largely focussed to the south of and enclosed by the mature vegetation lining the minor road, with associated restricted views towards the proposed development.
- There two detached houses associated with Redwick House, including The Stables, which appear to be very well enclosed by mature garden vegetation as well as linear vegetation in the intervening landscape, which will restrict potential views towards the proposed development.
- Near to the junction with North Row, as illustrated in **Viewpoint 4 (Figure 8.13A)**, this small cluster of houses appear to be enclosed by surrounding mature vegetation, largely restricting views into the wider levels landscape, including towards the proposed development.
- There are properties along Longlands Lane to the south-west as illustrated in **Viewpoint 2 (Figures 8.11 A-B)**. Little Longlands is a detached two storey property which is orientated to the south-east and appears to be well-enclosed by trees.
- There are also two detached properties in Longlands. These are orientated to the south-west, with farm buildings to the north. Oblique views above the intervening single storey farm buildings may be possible over the surrounding levels landscape from the upper stories of the houses towards the proposed development. Separated by intervening vegetation lined fields, although glimpses of the proposed development may be possible, it will be set within a well-vegetated landscape and largely screened. Any views of the proposed development will not dominate.
- There are scattered properties along North Row to the west. The scattered residential properties are largely set within and enclosed by large well-vegetated gardens and surrounding farm buildings as well as the mature vegetation enclosing North Row (for the properties to the west of the minor road) with associated restricted views towards the proposed development.
- Tonew Kennels also occurs to the west accessed via a track off the crossroads with North Row and Cock Street. This two storey detached property faces onto the farm and access track to the north, with single storey kennels situated to the east only restricting views from the ground floor. Although views are possible across the surrounding levels landscape including towards the scattered wind energy schemes and the lines of pylons that occur immediately to the north and south of the property, any views towards the proposed development will be restricted by the mature vegetation in the intervening fields, including lining the public right of way on the western boundary of the proposed development.

8.253 For the majority of the residential properties in close proximity however, the magnitude of impact will be **no change**, the level of effect will be **neutral**. At worst, glimpsed views towards the proposed development from the closest residential properties associated with Longlands Farm may be possible from the **medium-high sensitivity** (first floor) residential properties. The magnitude of impact will be **low**, the level of effect will be **minor adverse**.

National Cycle Routes

8.254 National Cycle Route (NCR) 4: Celtic Trail crosses the study area from east to west, generally following minor roads and lanes across the levels landscape, approximately 70m to the south-west of the proposed development at its closest point.

8.255 Largely following straight minor roads and lanes, the dense vegetative enclosure along the road network, as well as lining the intervening fields will restrict the majority of views towards the proposed development, as illustrated in **Viewpoint 4 (Figure 8.13A)**.

8.256 Even above or from gaps in this immediate vegetative enclosure, where occasional exposed and expansive views are possible across the adjacent levels landscape, as illustrated in **Viewpoint 8 (Figure 8.17A)**, the numerous lines of intervening mature vegetation will restrict the visibility of the proposed development.

8.257 As illustrated in **Viewpoint 15 (Figure 8.24A)**, even from an elevated bridge, wider views towards the proposed development will be restricted by intervening mature vegetation.

8.258 From the **medium-high** sensitivity NCRs, the magnitude of impact will be **no change**, the level of effect will be **neutral**.

Recreational Routes

8.259 The Wales Coast Path recreational route follows the coastal fringes, broadly from the east to the west of the study area. Largely following the elevated coastal sea defenses, approximately 1km to the south of the proposed development at its closest point, exposed and expansive views are possible across the adjacent levels landscape, including towards the distant well-vegetated hills broadly to the north.

8.260 However, even from these elevated locations along the sea defenses, as illustrated in **Viewpoint 12 (Figure 8.21A)** and **Viewpoint 16 (Figure 8.25A)**, although views of pylons, large industrial buildings associated with the steel works and the fringes of Newport as well as scattered operational wind turbines focused within the levels landscape and viewed against a background of rising hills are possible, the proposed development will be difficult to perceive. Nestled within the levels landscape and screened and enclosed by linear vegetation, both surrounding the development and in the intervening landscape, the proposed development will be very difficult to perceive.

- 8.261 Even when the recreational route branches inland to the east, it is largely enclosed by a combination of development, sloping landform and mature vegetation. Even from high points, as illustrated in **Viewpoint 15 (Figure 8.24A)**, although views into the surrounding undulating farmland and lower levels landscape are possible, the proposed development will be difficult to ‘pick out’ in the expansive view.
- 8.262 From the **medium-high** sensitivity recreational route, the magnitude of impact will be **no change**, the level of effect will be **neutral**.

Local Public Rights of Way, Bridleways and Cycleways

- 8.263 Scattered public rights of way, bridleways and cycleways cross the study area. Often following field boundaries, they are generally enclosed by a combination of hedgerow and linear tree belt vegetation which will restrict the majority of views towards the proposed development.
- 8.264 It will generally only be from those public rights of way in close proximity, following tracks broadly to the east and west, which will experience views of the proposed development.
- 8.265 The public right of way immediately to the east of the proposed development (recognised as a route with public access) runs from north to south and follows a raised embankment across the levels landscape. Intermittently lined by vegetation, close proximity open views towards the proposed development will be possible, as illustrated in **Viewpoint 3 (Figures 8.12A-B)**. From immediately adjacent to the proposed development, the presence of the solar panels will create a change to the view, which will be impossible not to notice. Although confined to the regular landscape pattern, with wider views of the solar panels restricted in the flat levels landscape, the presence of the proposed development in such close proximity will be impossible not to notice. At worst, from immediately adjacent to the proposed development, the magnitude of impact from this **medium-high** sensitivity public right of way (in the SLA) will be **medium-high**, the level of effect will be **moderate adverse**.
- 8.266 Very quickly however exposed views of the proposed development from the public right of way will diminish due to screening by linear vegetation in the intervening landscape as well as surrounding the site itself, as illustrated in **Viewpoint 5 (Figure 8.14A)**.
- 8.267 In contrast, the public right of way immediately to the west of the proposed development, (recognised as a route with public access) and running along Rush Wall Lane from north to south is largely enclosed by dense linear vegetation on both sides, restricting the majority of views into the surrounding landscape, including towards the proposed development, as illustrated in **Viewpoint 6 (Figure 8.15A)**. Glimpsed views however may be possible towards the proposed development from the public right of way in close proximity from the few gaps in vegetative enclosure as well as during the winter months. Such views however will not dominate and at worst, the magnitude of impact from this **medium-high** sensitivity public right of way (in the SLA) will be **medium-low**, the level of effect will be **minor adverse**.

- 8.268 Further afield, for the scattered public rights of way in the levels landscape the numerous lines of mature vegetation that border the regular field network will help to limit many long distance views, including towards the proposed development. Even from selected elevated locations, such as bridges, as illustrated in **Viewpoint 11 (Figure 8.20A)**, views towards the proposed development will be restricted by the surrounding enclosing woodland vegetation.
- 8.269 However, as the landform begins to rise broadly to the north of the study area, more expansive and elevated views towards the proposed development will be possible from the network of public rights of way that cross the agricultural and well-vegetated landscape.
- 8.270 As illustrated in **Viewpoint 13 (Figures 8.22A-B)**, from a selected and open location on the slopes of Wilcrick Hill, the proposed development will be perceived within the lower levels landscape. Set within the regular framework, the proposed development will be perceived, but will not dominate the view, already influenced by pylons, wind turbines and large industrial structures. The proposed development however will be perceived and influence the view and the magnitude of impact from this short stretch of **medium** sensitivity public right of way will be **medium-low**, the level of effect will be **minor adverse**.
- 8.271 However such exposed and elevated views of the proposed development will be relatively limited. As illustrated in **Viewpoint 14 (Figure 8.23A)** from a selected open and elevated location on the agricultural slopes above Bishton, views are possible over the lower levels landscape, including towards the prominent pylons and scattered wind energy schemes but the proposed development will be difficult to 'pick out'. A combination of distance, subtle variations in landform and screening by mature vegetation and development restricting the visibility of the proposed development.

Open Access Areas

- 8.272 There are very small open access areas, scattered within the levels landscape, the closest small linear strips along tracks to the south and west of Whitson approximately 2.6km to the south-west of the proposed development at its closest point. Barely within the ZTVs, any potential views towards the proposed development will be restricted by the numerous lines of intervening mature vegetation in the levels landscape. The magnitude of impact from these **medium-high** sensitivity open access areas (within the SLA) will be **no change**, the level of effect will be **neutral**.
- 8.273 The more expansive open access areas in the study area are largely situated on elevated land within forestry plantations, focussed to the north and north-east on the elevated and well-vegetated ridges. Intermittently within the ZTVs, in reality the density of surrounding mature woodland and plantations will restrict any potential views towards the proposed development. The magnitude of impact from these **medium** sensitivity open access areas will be **no change**, the level of effect will be **neutral**.

Major Roads, including Motorways

- 8.274 The M4 crosses the study area from the east to the west of the study area, approximately 1.7km to the north of the proposed development at its closest point, splitting approximately 2.4km to the north-east into the M48.
- 8.275 Largely excluded from the ZTVs, these busy major roads are also largely surrounded by a mixture of undulating landform and significant linear vegetation enclosing their fringes which will restrict any potential glimpsed and fleeting views towards the proposed development. Even from a bridge over the M4, as illustrated in **Viewpoint 15 (Figure 8.24A)**, views towards the proposed development will be restricted by a combination of distance and intervening screening. The magnitude of impact from these **low** sensitivity major roads will be **no change**, the level of effect will be **neutral**.
- 8.276 The closest major road to the proposed development is the A4810 which connects to the M4 approximately 1.6km to the north at Junction 23A before heading westwards to connect with the fringes of Newport. The A4810 connects the numerous large-scale industrial buildings scattered along this busy arterial route. As illustrated in **Viewpoint 7 (Figure 8.16A)**, as the road slopes down from the motorway junction, wider views towards the proposed development will be restricted by intervening mature vegetation.
- 8.277 The A4810 however does become more open as it passes through the levels landscape on embankment, passing approximately 230m to the north of the proposed development at its closest point. As illustrated in **Viewpoint 10 (Figure 8.19A)**, although occasional expansive views over the surrounding flat levels landscape are possible, potential glimpsed and fleeting views of the proposed development from the main road will be limited by the intervening mature vegetation lining the surrounding fields.
- 8.278 In addition, the A48, set within the undulating and well-vegetated landscape, crosses the fringes of the study area, approximately 4.8km to the north of the proposed development at its closest point. It is excluded from the ZTVs and would experience no potential views towards the proposed development.
- 8.279 The magnitude of impact from these **low** sensitivity major roads will be **no change**, the level of effect will be **neutral**.

Minor 'B' Roads and Unclassified Roads

- 8.280 Numerous minor roads bisect the study area and are largely crossing the flat levels landscape to the south and focussed within the undulating landscape broadly to the north of the study area with associated variable views into the wider landscape, including towards the proposed development.
- 8.281 A network of generally straight minor roads surrounds the proposed development to the north (Bareland Street), east (Whitewall Lane and Pill Street), south (Green Street) and west (Longlands Lane and North Row). These generally very straight roads pass through the regular levels

landscape and are largely enclosed by a varied network of trimmed and overgrown hedgerows, fencing, linear tree belts and scattered development, which provide enclosure and screening to views. As illustrated in **Viewpoint 4 (Figure 8.13A)**, views towards the proposed development from the surrounding minor roads will be largely restricted by mature vegetation enclosing the minor roads themselves as well as lining the intervening fields.

- 8.282 Selected open views will however be possible across the regular levels landscape, including towards the proposed development, from gaps in enclosure along the network of minor roads, including towards the numerous lines of pylons and wind energy schemes which dominate views, against a rising well-vegetated ridge backdrop. As illustrated in **Viewpoint 1 (Figures 8.10A-B)**, glimpsed views of the proposed development will be possible from a gateway and gap in enclosure along the otherwise very enclosed Green Street to the south of the proposed development. Although views are possible across the immediately adjacent fields, the majority of wider views towards the proposed development will be restricted by the numerous lines of mature vegetation enclosing the intervening fields. Only glimpsed and fleeting views will be possible of the proposed development which will easily go un-noticed, although may be more prominent during the winter months. At worst, from this **medium-low** sensitivity receptor, the magnitude of impact will be **low**, the level of effect will be **negligible adverse**.
- 8.283 Views will also be possible of the proposed development from selected open locations along the close proximity minor roads. As illustrated in **Viewpoint 2 (Figures 8.11A-B)**, from an open section along Longlands Lane, open views will be possible across the immediately adjacent fields, including towards the scattered houses and buildings associated with Longlands Farm, towards the proposed development. The proposed development will however be largely screened by intervening vegetation, including lining the site boundary and will only be barely perceived above the surrounding enclosure. From this **medium-low** sensitivity receptor, the magnitude of impact will be **low**, the level of effect will be **negligible adverse**.
- 8.284 With distance however, the visibility of the proposed development will very rapidly decrease. Although selected views are possible above vegetation enclosing the minor roads, as illustrated in **Viewpoint 8 (Figure 8.17A)** from North Row to the west and in **Viewpoint 9 (Figure 8.18A)** from Whitewall Lane to the east, views towards the proposed development will be restricted by the numerous lines of mature vegetation in the intervening landscape and enclosing the site itself. For the majority of **medium-low** sensitivity minor roads in close proximity to the proposed development, the magnitude of impact will be **no change**, the level of effect will be **neutral**.
- 8.285 Even when more open views are possible, such as from selected elevated locations, more distant views, including towards the proposed development will often be restricted by subtle variations in landform and extensive intervening mature vegetation.

Railway Lines

- 8.286 The main railway line crosses the study area broadly from the east to the west, approximately 700m to the north of the proposed development at its closest point.

8.287 Crossing the fringes of the levels landscape in a mixture of cutting and embankment, it is only immediately to the north that the railway line is within the ZTVs and has the potential to perceive the proposed development. However, in close proximity to the proposed development, immediately to the north, the railway line is very well enclosed by mature vegetation and development, both surrounding the railway line and in the intervening landscape, which will restrict any potential glimpsed and oblique views towards the proposed development. As illustrated in **Viewpoint 11 (Figure 8.20A)**, even from a pedestrian bridge crossing the railway line, views towards the proposed development will be restricted. There will be no potential views from users of the railway line as a result of the proposed development. The magnitude of impact from this **low** sensitivity receptor will be **no change**, the level of effect will be **neutral**.

CUMULATIVE IMPACTS AND EFFECTS

8.288 The proposed development is considered 'in addition' to:

- Consented and under construction schemes in the study area, where they are highly likely to exist; and
- 'Pending planning' schemes within the study area, where there is only the potential that they will exist.

8.289 The location of the potential cumulative schemes is identified in **Figure 3.2** and a list of projects potentially included in the cumulative assessment in **Table 3.2**.

8.290 The additional cumulative influence of the proposed development is however focused on the consented solar schemes and consented wind turbine, as identified on **Figure 8.3**, within close proximity to the proposed development. Within the flat and well-vegetated landscape that dominates the study area, the potential additional influence of the proposed development in combination with the other cumulative schemes, as identified in **Table 3.2** and shown on **Figure 3.2** have not been considered any further within this LVIA chapter.

8.291 There are two consented solar schemes and one consented wind turbine within the study area.

8.292 The extent of the consented, as well as the operational, solar schemes within the study area, in combination with the proposed development is also illustrated on **Figures 8.10-8.25**. The location of the consented wind turbine is also illustrated.

Landscape Character

8.293 Separated by extensive lines of mature vegetation and set within the flat regular agricultural landscape that is characteristic of the wider area, the addition of the proposed development, in combination with the consented Llanwern solar scheme to the west, will not have a significant additional material influence on overall landscape character.

8.294 A combination of distance and screening by subtle variations in landform and mature vegetation and development will also ensure that the addition of the proposed development, in combination

with the consented Magor Motorway Service Area solar scheme, broadly to the north within the rising landscape will also not have a significant additional material influence on overall landscape character.

- 8.295 The consented turbines at Rush Wall will add another, albeit large, moving vertical element to the landscape, already influenced by other operational turbines and lines of pylons.
- 8.296 Overall, the proposed development will be well-absorbed in the landscape and largely will not influence the wider landscape character or the setting of landscape relevant designations. Although the proposed development in combination with the consented solar schemes will have the potential to be perceived from selected locations, set within a well-vegetated landscape, the perception of a number of solar schemes will not indirectly influence the wider landscape character. The addition of the proposed development will not create a landscape dominated by solar schemes which will influence the setting or the integrity landscape relevant designations or change the landscape character into one influenced by solar energy. The addition of the proposed development, even in combination with the consented solar schemes, will not dominate the landscape.

Visual Amenity Receptors and their Views

- 8.297 The enclosure provided by the extensive lines of mature vegetation within the flat levels landscape and a combination of subtle variations in landform and screening by mature vegetation and development will ensure that the addition of the proposed development in combination with the consented solar schemes and wind turbine within the study area will not dominate any potential views.
- 8.298 Even when there is the potential for the proposed development to be perceived in combination with the consented solar schemes, solar schemes will not dominate the view. The perception of numerous solar schemes will not dramatically influence views. The addition of the proposed development will not create views dominated by solar schemes.
- 8.299 In addition, there is the potential for the proposed development to be perceived sequentially with the consented solar schemes in particular from the network of minor roads.
- 8.300 However, enclosed by mature vegetation with glimpsed views restricted to gaps in the enclosure such as gateways, in reality, any sequential cumulative effects on visual amenity receptors will be extremely restricted.
- 8.301 The addition of the proposed development, even in combination with the consented solar schemes and wind turbines, will not dominate views or journeys from visual amenity receptors.